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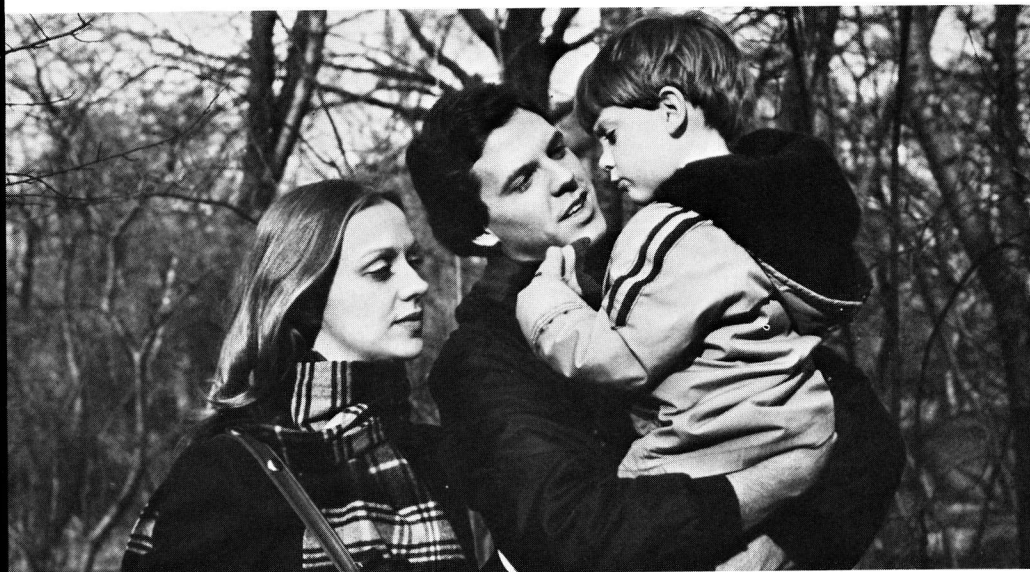
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canadian home economics

JOURNAL

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President's Message

Greetings from Edmonton

Far from being "the frozen north" Edmonton gave your executive an open winter and we experienced very little difficulty getting to meetings.

We have discovered however that an uninitiated executive has its hands full trying to keep its fingers on the pulse of an organization with very far-flung and diverse individuals and groups. This Journal is the major link between the members of CHEA. It has been improving in quality and quantity over the years and it has even taken on a New Look in 1977!

This issue of the Journal is the last issue which our editors Jane Hope and Margaret Smith will put to bed. Together they have given a total of more than eighteen years of service to our Association. We, the executive are sure that we speak for all of you when we say "Thank you for a job well done". We have truly appreciated their efforts.

The new Chairperson of the CHEA Journal Committee is to be Dr. Edith Down from Edmonton. Under her direction the mast-head will move west for the next few years. We welcome Edith to the job and wish her well. She will be grateful for your suggestions. Please send them along.

The Executive invite your participation in the activities of CHEA, through the Journal, through the newsletter or through volunteering for a role in one of the many committees which keep up the work of the Association. Don't leave it all to the Margarets, the Janes and the Ediths. Let's hear from the rest of you.



Your president.

Doris R. Badir
President C.H.E.A.



Executive at Work: — Left to Right Dr. E. Down (back to camera), Chairperson Education Committee., Ms. Linda St. Onge, Vice-President, Ms. Iva Bradley, Acting Secretary and Ms. Doris Badir, President

EXECUTIVE DIRECTOR'S MESSAGE

In addition to functioning as homemakers, business people, teachers, students, consultants, dietitians, managers and almost any other occupation one could name, members of C.H.E.A. spend considerable time and energy working for the benefit of our Association and the profession. Included in this group are your Executive Committee, Provincial Directors and Chairpersons of Standing and Special Committees. As well, many of them are involved in the work of regional, local and provincial Home Economics groups and in other organizations.

We all know people in the "closet home economist" category — how can we best encourage them to take more pride in their profession? Are they in that category because of the out-dated image of the home economist? Can we bring them out of hiding to take more interest in the profession and inspire greater commitment?

All of us can take pride in what this Association and its members are doing. Do plan to attend the Conference in Winnipeg this June — read the Annual Reports — find out where you can "plug in" to the activities of this, your Association. We will all benefit from your interest, your help, your commitment.



Nola Wade

FROM THE EDITOR'S DESK

As you will notice, we have changed the cover of the Journal. We hope that you approve of the '77 look and encourage your comments.

The Journal has also become larger. This is due to two reasons. We have been able to cut the printing costs to a minimum and there has been an increase in the amount of advertising.

The Journal is always mailed during the month of its publication. Thus the Journal for January was mailed on January 24. As of February 15, we have not received our own copies! We have discovered that the postal station from which the Journal is mailed was moved on January 25. Our printer was never notified of this. The Journal is posted as third class mail and third class mail does not move quickly, even at the best of times. So, keep hoping and praying.

The new editor of the Journal is Dr. Edith Down of the University of Alberta. During the next few months, the transfer of the Journal from Toronto to Edmonton will take place. This will not be an easy task and we ask for your consideration and patience.

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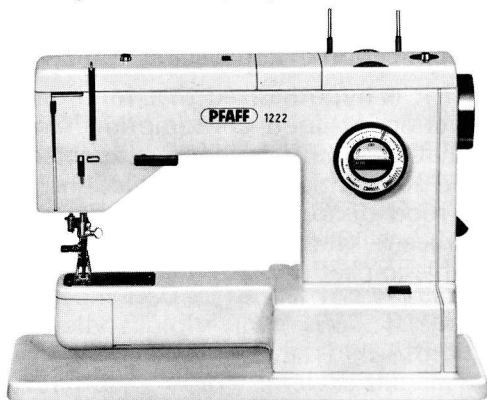
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FOOD DISAPPEARANCE TRENDS AND NUTRITIONAL HEALTH IN CANADA

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Presented at: Nutrition 1976 University of Toronto

Introduction

Because the nutritional status of a population is directly related to the quality and quantity of food consumed, food data are often collected, analyzed, and interpreted with considerable enthusiasm. As a result, it is not unusual to find the latest Statistics Canada data on the "Apparent per capita domestic *disappearance* of food"¹ referred to as food *consumption* data. Further, the data are often interpreted as reliable predictions of the nutritional health of individuals. In truth, an opinion or hypothesis arising from examination of trends in food disappearance can only be substantiated by careful investigation of nutritional health through detailed clinical, biochemical and dietary studies. The results of such investigations can only be interpreted to give a profile of the population and have much less application in counselling of individuals.

If it is hypothesized that food disappearance data provide a reasonable prediction of food consumption, and hence, the nutritional health of a population, then it might be expected that the results of a nutrition survey would substantiate these predictions. In the following presentation data on past food disappearance trends are examined and related to the results of the recent Nutrition Canada Survey. Comments are also made on the possible impact of present and future foods on nutritional health.

A. Trends in Food Disappearance

Estimates in the apparent per capita domestic disappearance of food in Canada from 1935 to 1974 are available from Statistics Canada¹. Judging from the content of the various publications, it appears that the data collection and reporting is most complete only since 1947². Thus, compared to the United States, Canada has available only a short history of information on which trends can be discussed.

Where possible, the data discussed are those that go back as far as 1935. However, most of the data obtained and discussed relies on that obtained since 1950.

At the outset, it should be recognized that the data discussed represent *food disappearance* not *food consumption*. Basically, the data represent food available at the retail level after consideration of production, imports and exports, ending stocks, seed requirements, manufacturing inputs, livestock feed and waste. No allowance is made for losses or wastage of food in stores, or homes, nor are home grown products included.

It should also be recognized that these statistics are average per capita figures and that all of these considerations suggest that the observed trends be interpreted with considerable caution.

1. Total Food Energy

The per capita total energy (kcal) available for consumption from 1935 to 1974 has changed little, averaging approximately 3000 kcal/day (Table 1).

TABLE 1

Total energy disappearance and distribution among carbohydrate, fat and protein in foods.

Year	Total Calorie Disappearance	Carbohydrate		Fat		Protein	
		g/day	% total calories	g/day	% total calories	g/day	% total calories
1935	3010	407	54	114	34	89	12
1940	2966	390	53	118	35	86	12
1945	3055	388	51	123	36	99	13
1950	3063	405	52	126	37	83	11
1955	3005	387	51	126	38	86	11
1960	2999	386	51	127	38	88	11
1965	3077	400	51	128	38	88	11
1970	3141	390	49	140	40	88	11
1974	3172	374	47	143	41	93	12

TABLE 2

Distribution of energy disappearance among food groups in Canada (% of total calories)

	1940	1974
Cereals	26.0	21.2
Meat	12.0	18.7
Sugar and Syrups	18.0	14.3
Oil and fats	14.0	15.3
Milk and Cheese	12.0	11.9
Fruits	6.0	4.3
Potatoes	7.0	4.2
Poultry	1.0	2.5
Pulses and nuts	2.0	3.0
Eggs	2.0	1.6
Vegetables	1.0	1.3
Other	1.0	1.7

A perspective of the total energy distribution by food groups shows a few changes since 1940 (Table 2). Most of the dietary energy comes from cereals, meats, sugars and syrups, and visible oils and fats. The most noticeable changes since 1940 are a decreased proportion of energy from cereals and from sugars and syrups, and an increase in meat disappearance. Cereals decreased from 26.0 to 21.2% of the total calories, sugars and syrups from 18.0 to 14.3%, whereas meat increased from 12.0 to 18.7%. The increase in meat consumption has occurred especially rapidly since 1962. It should also be noted that fruit disappearance has decreased considerably. Although a relatively small contributor to the total daily energy intakes, the change in this food group represents a decrease by almost one-third.

If the data are examined on the basis of the macro-components of the food, then it is observed that disappearance of carbohydrate and fat has changed while protein, despite the increase in meat disappearance, has remained very constant. Carbohydrate has decreased from 54 to 47%, while fat has increased from 34 to 41% of the total food energy (Table 1).

By weight, per capita disappearance of carbohydrate has decreased from 407 to 374 g/day, whereas fat has increased from 114 to 143 g/day. Protein has remained relatively constant, approximating 90 g/day.

2. Protein

Although total protein disappearance has remained constant over the years, the composition has changed. Since Canadian food disappearance data seem to parallel that of the United States, the more complete U.S. data may be used to illustrate the changes in the nature of dietary protein³. In 1910 plant and animal protein contributed equally to the total protein consumption. However, by 1970, plant protein contributed only 32% whereas animal protein contributed 68%.

Certainly, there is no shortage of high quality protein in the Canadian diet. Whether or not the shift to animal protein is of significance in relation to health for reasons other than its biological value is unknown. However, recent studies indicate that plant proteins, when compared in isonitrogenous amounts to animal proteins in animal feeding studies, have a cholesterol lowering effect⁴.

3. Carbohydrate

Generally, there has been a decrease in disappearance of dietary carbohydrates since 1935 (Table 1). As a contributor to the carbohydrate calories, sugar has received the most interest. Per capita disappearance of sugar has fluctuated and was lowest during the war years because of rationing. Disappearance reached a short-lived high in 1973 at 143 g/day/person. During the past recent years (1974 and 1975) disappearance has decreased because of price factors. Sugar, as a proportion of total calories in the diet, was lower in 1974 than in 1940. As a proportion of carbohydrate calories, sugar consumption did reach highs of 35 to 37% during the early 1970's but over the majority of the time contributed about 32% of the carbohydrate calories.

Curiously, these disappearance data are often used by those antagonists of sugar consumption to develop correlations between sugar intakes and modern diseases. It is no wonder that most scientists are unable to be convinced of an acute need to remove sugar from the diet.

4. Fat

Over the past forty years the total fat content of the diet has increased in absolute amounts and as a proportion of the total calories (Table 1).

More specific observations can be made by looking at the more complete data available since about 1950. As a proportion of fat calories, animal fat decreased from 77.9 to 66.6%, vegetable fat increased from 18.8 to 28.5%, and marine and poultry fat increased from 3.6 to 4.9%⁵.

As previously indicated, meat consumption has increased during this same period. However, because of a decrease in butter consumption (from 23 lbs in 1948 to 12 lbs in 1975) and in animal oils as visible fats in the diet, total per capita consumption of animal fat has changed little². Rather, the amount of fat from vegetable oils in margarine, shortening and salad oils has doubled from approximately 18 to 35 g per day, accounting for the increase in total dietary fat during this period.

Of the vegetable oils in margarines and shortenings, a number of

changes are of interest (Table 3). Cottonseed oil has been largely replaced by rapeseed, an oil not used in the diet in 1950. Palm oil has increased from 4.9 to 12.8%. Because of large supplies of palm oil in Malaysia, it is likely that data for at least the 1975-1980 period will show this oil to make a significantly larger contribution to the diet.

These changes in vegetable oil composition of margarines and shortenings are of interest for several reasons. First, high linoleic acid (unsaturated, essential fatty acid) sources are being replaced by comparatively low sources. Cottonseed oil contains about 50% linoleic acid, whereas rapeseed oil and palm oil contain 15% and 10%, respectively. Although it is very unlikely that the changes will lead to essential fatty acid deficiency, they may represent a decrease in the consumption of unsaturated fat in the diet. However, even this is uncertain because it has been estimated that approximately two-thirds of the vegetable oils in margarines and shortenings are partially hydrogenated in order to provide the desired stability and consistency in the final product⁶. In the process of hydrogenation the unsaturated bonds in the fatty acids become saturated with respect to hydrogen. Because of the lack of specificity of this process approximately 15 to 46% of the saturation results in the formation of *trans* isomers rather than the natural product *cis* isomers, depending on the product.

Animal data suggest these *trans* fatty acids are not metabolized in the same manner as the *cis* forms. In a recent feeding study, hydrogenated corn oil was shown to elevate cholesterol levels in blood above that observed when beef tallow was the source of fat in swine diets⁷.

The subject of a possible causal relationship between arteriosclerotic disease and quantity and quality of dietary fat has led to endless discussion, but much less critical experimentation. The saturated versus unsaturated fatty acid controversy is well-known. However, a recent epidemiological study associating mortality from arteriosclerotic disease with the consumption of hydrogenated oils and fats adds a new dimension to the problem⁸.

The study was conducted in the United Kingdom, where total fat disappearance is similar to that in Canada. However, margarine consumption during the 1950's was nearly 20 g/day compared to 6 g/day/person in Canada. Margarine consumption is now close to 12 g/person/day in both countries.

A rather close correlation was observed between household consumption of hydrogenated fat and standardized mortality ratios for cardiovascular disease for the period 1959 to 1963. The author appears to effectively counter the argument that the correlation is an artifact arising from

TABLE 3

Vegetable oil distribution in margarines and shortenings (%)

	1950	1973
Coconut	4.2	7.3
Cotton seed	35.5	2.8
Palm	4.9	12.8
Peanut and corn oil	—	3.2
Rapeseed	—	38.0
Soybean	25.4	33.1
Sunflower	8.2	7.9

TABLE 4

Crude fiber in the Canadian diet (g/person/day)

	1940	1950	1960	1970
Total fiber	5.11	4.98	4.42	5.00
Source of fiber				
Potatoes	1.50	1.29	1.03	1.16
Vegetables	0.73	1.01	1.31	1.40
Fruits	1.01	0.96	1.00	1.32
Pulses and nuts	0.90	0.79	0.31	0.39
Cereals	0.97	0.93	0.79	0.78

superimposing social class differences upon geographical differences in order to develop the hydrogenated fat gradient.

The author also makes the observation that since 1960 cheap marine-animal and fish oils have been increasingly used in margarines. As a result, margarines have contained increasing quantities of saturated and lightly unsaturated glycerides of fatty acids of chain-length in excess of C_{18} , namely C_{20} and C_{22} acids, which are virtually absent in traditional fats. It is in this light that the rapid increase in rapeseed oil consumption should be considered. In Canada, rapeseed oil makes up 38% of the vegetable oil usage in margarines and shortenings and close to 50% in salad oils⁵. The oil varieties of rapeseed produced oils containing a 22-carbon, mono unsaturated fatty acid known as erucic acid. This oil has been shown to cause heart lesions when fed at levels as low as 15 to 20% of the calories in diets fed experimental animals⁹. Although plant-breeding programs have now reduced the erucic acid content to very low levels, the new oils still cause some changes in heart tissues of experimental animals. This appears to be a problem caused by a combination of the unsaturation and chain length of the fatty acids.

Consumption of rapeseed oils represents about 5% of the calories in the human diet. Whether or not this is a risk level is unknown, and promises to be of interest to epidemiologists in the near future. The specific effects of rapeseed oils on metabolism are currently being rigorously examined by government, academic and industrial scientists¹⁰.

5. Dietary Fiber

The recent interest in dietary fiber¹¹ suggests that some observations on the fiber content of the Canadian diet should be made in considering food consumption trends. However, this is difficult because the dietary fiber attributed to be essential in the diet has not been classified chemically. Dietary fiber is simply a generic term for those plant constituents resistant to digestion by secretions of the human gastrointestinal tract. It includes a heterogeneous group of carbohydrate compounds (cellulose, hemicellulose, mucilages, pectins, gums) and the non-carbohydrate lignin, which is a polymer of phenyl propane units.

Present food composition tables give only crude fiber, a component remaining in food after rigorous treatment with acid and alkali. Using these data for crude fiber, it would appear that total fiber of the Canadian food supplies has changed little, averaging 5 g/person/day. However, between 1940 and 1970 cereal fiber has decreased, reflecting the decrease in cereal consumption. Vegetable and fruit fiber has increased (Table 4).

Whether or not these changes are of any significance to the health of the Canadian population is uncertain. Further, the observation that total fiber has not changed since 1940 does not mean that the Canadian diet is not too low in fiber to be consistent with optimal health status.

6. Vitamins and Minerals

It is extremely hazardous to attempt any qualitative analysis of changes in vitamin and mineral content of the diet over the years for which we have food disappearance data.

However, there are a number of arguments which can be presented to suggest that the nutrient density of our diet is now better than it was 35 years ago. First, a comparison of the nutrient contribution by cereals would show an increase in thiamin, riboflavin, niacin and iron. Enrichment of flour with these nutrients began around 1950 in Canada. Second, because of increased meat consumption, it might be reasonable to expect that vitamin B₆ intakes are now higher. Third, the proportional decrease in sugar and syrup disappearance might indicate that the overall nutrient density of the diet is better than 35 years ago. Finally, food technology has given us better methods of food and nutrient preservation, including freezing, perfection of canning techniques, and freeze drying. These factors, combined with highly efficient food distribution systems, provide Canadians with the opportunity of selecting from a variety of foods of high quality on a year around basis.

B. Nutritional Health of Canadians

Although the foregoing arguments have been presented to suggest that the nutrient density of the total diet is probably better now than in the past, the data can be used only with great caution in predicting the nutritional health of Canadians. Theoretically, a better estimate of the nutrient adequacy of the food supply is available from the results of the Nutrition Canada Survey¹². In this survey, over 15,000 Canadians were examined during the two year period 1970 to 1972 and their nutritional status determined in terms of clinical, biochemical and dietary data.

An almost total absence of nutrient related disease was observed from the clinical and biochemical evidence, with the exception of some data on the Indians and Eskimos, and with the exception of the nutrients iron and folate. On the basis of these data, nutrient intakes appear to be satisfactory, substantiating opinions derived from food disappearance data.

Folate was a vitamin identified to be most deficient in our diet as indicated by serum folate measurements in the recent Nutrition Canada Survey¹². Again, it seems doubtful that this was caused by a decline in the quality of the diet. The sources of folate have perhaps shifted, but the decrease in vegetable consumption has been more than balanced by an increase in fruit, meat and cheese consumption. If folate is currently low in the diet and is contributing to a nutritional problem, then it was also a problem 25 years ago.

Iron content of the diet continues to be a problem despite enrichment of cereal products. Significant evidence of low body stores of iron in both men and women was obtained during the Nutrition Canada Survey. The lower than anticipated impact of the iron enrichment programme has been attributed to the low bioavailability of the added iron. Minimum specifications for the bioavailability of the added iron are currently being set in an attempt to rectify this problem.

A major problem identified was that Canadians have an energy problem, with over 40% of the adults showing a high ponderal index indicating obesity. This problem has not been associated with a decline in quality of the food supply, nor, surprisingly, with excessive quantity.

From the data derived in the survey, using a 24 hr recall, it was suggested that Canadians are not gorging themselves. The daily energy intakes of adult males and females averaged 2400 and 1700 kcal, respectively (Table 5). An attempt to correlate energy intakes with obesity failed as the obese groups and the non-obese groups were found to be similar.

The cause of obesity has been associated with the change in activity levels in the population. Our population of workers has changed from close to half being involved in agriculture at the turn of the century to only 6% in 1971¹³. When the Canadian labour force is classified according to activity levels, it is concluded that Canadians have become an increasingly sedentary population. But even these figures are unlikely to give a total perspective of changes in activity levels. For example, the strenuous labour previously associated with farming is no longer observed due to the many labour-saving machines now found on every farm. For example, think of the labour required in harvesting associated with the old-time threshing machines compared to the finger tip operation of modern air-conditioned, stereo-equipped combines.

Even though the nutrient density of our diet is perhaps as good or better than ever, these low activity levels appear to place challenges on the quality of the diet. At present (as forty years ago), approximately one-third of the energy in the diet appears to be derived from high-energy low-nutrient foods such as sugars and syrups, visible oils and fats and alcohol. If, for example, an average female 40 to 64 consumes a diet corresponding to this distribution of dietary energy, will she be adequately nourished? Canada's Food Guide indicates that approximately 1600 kcals of traditional foods are required in order to provide a nutrient adequate diet. If

TABLE 5

Mean Energy Consumption by Canadians (kcal)

<u>Age Group</u>	<u>Male</u>	<u>Female</u>
20-30	3225	1925
40-64	2460	1700
65+	1890	1500

this "average female" is consuming only 1700 calories of a pattern characteristic of the Canadian diet, then she will be consuming only 1200 kcals (2/3) from traditional "protective" foods. Is this enough?

While the dietary pattern may be criticized, it is likely that it was the low food intakes recorded in the Nutrition Canada Survey which led to the many observations of nutrient intakes below the recommended dietary allowances⁴. But before concluding that the diet is inadequate in many nutrients, perhaps the Nutrition Canada food record data should be challenged and the conclusion be that food intakes were grossly under-estimated.

There are several lines of evidence to believe the latter conclusion. First, the biochemical and clinical data indicated the population surveyed to be very healthy except for the obesity problem. Second, it is hard to believe that people are becoming obese consuming quantities of food only slightly above resting metabolic rate requirements. Finally, food disappearance data do not show a decline in per capita food energy over recent years. If the food isn't being eaten, where is it going? Is an increase in food wastage occurring because of wasteful practices in homes and restaurants sufficient to maintain food disappearance levels but reduce the amount of food available for consumption? There are no good answers to these questions, but we should be concerned over this apparent inconsistency in information obtained by the food data from the Nutrition Canada Survey and from disappearance records.

Nutrition Surveys usually omit attempting to evaluate the biochemical effects of factors associated with risk of heart disease. However, the Nutrition Canada Survey obtained values for serum cholesterol and concluded that 10 to 13% of adult men and 14 to 34% of adult women in the General Population were in the "at risk" category. No attempt was made to identify the cause of these high cholesterol levels by analyzing the food consumption data. While cholesterol levels are regulated by more than dietary factors, it would be interesting to see if the population with high cholesterol levels consumed more hydrogenated fats relative to the normal population.

C. Future Trends in Food Consumption

In the foregoing an evaluation has been made of the relationship of food disappearance to past nutritional health of Canadians. However the present and future food supply also deserves comment.

Rapid changes in the foods available for consumption are occurring because of our changing life styles, concern of health professionals over heart disease, and economic pressures. These factors have led to the availability of ready to purchase, highly recipied foods (e.g. main courses, T.V. dinners, pizza) and substitute foods such as soy-protein meat analogues. It seems likely that these trends will continue and that the nutritional implications of these changes are potentially of greater significance than any of the changes in the past 25 years.

Highly recipied foods

Food preparation in the home is not competitive with industry if a value is placed on the labour cost. Thus we see an increased availability of such items as ready-to-serve hors-d'oeuvres, pastries, T.V. dinners, main courses and minor courses on the supermarket shelves. The nutritional data on these foods are scanty and it is difficult to say whether these foods have more or less nutrients than is to be expected in home-prepared foods. This information must be derived in order to continue to assess the nutrient adequacy of the diet.

Substitute Foods

Substitute foods are a classification of foods which replace traditional food items in the diet. They are being created in part by industry Competition for new food items by health professionals who believe that the present diet is too high in saturated fats and cholesterol and too low in fibre, and by economics which show it may be cheaper to fabricate foods simulating animal products from plant components rather than by letting the animal do the conversion.

There are several examples of substitute foods, including margarine, yolk-free eggs, artificial milks and coffee creamers, and meat-like substitutes, fabricated from a variety of plant proteins.

Margarines have already been discussed in some detail. The shift to vegetable fat in the diet has been at least partially motivated by public concern over heart disease and by recommendations of health professionals that the public increase consumption of unsaturated vegetable fat. While this may be good advice, the public makes little distinction between hydrogenated and unsaturated vegetable fats in shortenings and margarines. Although Health Protection Branch regulations allow labelling of these products so that the more unsaturated products may be identified, the labelling requirements are such that the information is provided in a manner which is unintelligible to most people. People don't realize that a margarine labelled 100% corn oil may be fully saturated and at best equivalent to saturated animal fat. Similarly, it may be this blind faith in a perceived health benefit to be derived from vegetable oils which accounts for the high consumption of substitute coffee creamers. Again, the consumer is probably unaware that the vegetable oils in these products are saturated.

Another example of a product which is a substitute food created to meet a perceived need to prevent and treat high blood fat is that of "Egg Beaters®". Egg Beaters are egg substitutes claiming to be "almost" identical in nutrient content to eggs except that the yolk — and hence the cholesterol — is removed. But what is the significance of the statement "almost the same nutrient content as hen's eggs"? In a rat feeding study done at the University of Illinois, rats fed Egg Beaters failed to grow, whereas those on hen's eggs grew normally¹⁵. Is there a message here?

Another example in which substitute foods provide less than the anticipated nutrients expected in the traditional food item is that produced by meat substitutes. Currently, the Health Protection Branch specifies that a number of nutrient levels in these meat substitutes be the same as in the product for which it substitutes. Yet allowance hasn't been made for the bioavailability of nutrients in the natural compared to the substitute item. This appears to be important as in one study¹⁶, it was demonstrated that thiamine retention after cooking was only 58% in the substitute product, compared to over 90% in the natural product. Obviously, even though the starting material contained the same amount of thiamine, the food consumed was very different.

Perhaps a solution to the above problems lies in part in what has been called "natural dietetics"¹⁷. For example, swine breeding and grading programmes have led to production of leaner pork. Australian researchers have shown that through dietary manipulation the unsaturated linoleic acid con-

tent of milk can be increased from 3 to 35%¹⁸. Similarly, the vitamins D and A can be increased. A big problem here is that these are expensive ways of modifying the final product. It should then be questioned whether our Agriculture Research programmes should involve large expenditures to develop and modify traditional foods for pampered Canadians rather than concentrate on efficient production methods to feed an increasingly hungry world.

Irrespective of the potential nutrient problems identified in the examples discussed, it is unlikely that any of these items would serve as a single food source in the human diet. Still, it is obvious that care must be taken to ensure that neither dietary advice nor new substitute foods compromise the present satisfactory intakes of essential nutrients. Because of this, it might be expected that the nutrient design of foods will become an increasingly contentious issue.

Summary and Conclusions

Both the food disappearance data recorded by Statistics Canada and the clinical and biochemical data obtained in the Nutrition Canada Survey suggest that the nutrient density of the diet has been satisfactory and has likely increased rather than deteriorated in the past 25 years. These observations are not supported by the food intake data obtained in the Nutrition Canada Survey. However, arguments can be presented to suggest that the survey records under-estimated energy and nutrient intakes.

More interesting and possibly significant changes which have occurred in the past 25 years are those associated with the increased amounts of vegetable oil in the diet. Much of the oil is hydrogenated prior to consumption and, in a study conducted in the United Kingdom, hydrogenated vegetable oil consumption was associated with an increase in arteriosclerotic disease. Rapeseed is a source of about 40% of the vegetable oil in the Canadian diet. Although this means that only 5% of the energy in the Canadian diet comes from rapeseed oil, it should be borne in mind that experimental animals fed diets containing 15 to 20% of the energy from the high erucic acid oils developed heart lesions. The effects of both of these factors associated with the increased vegetable oil consumption on the health of Canadians remains to be assessed.

More recent changes in the diet include an increased availability of highly processed foods and of substitute foods. In order to predict the nutritional health of Canadians in the future, much more nutrient information is needed on these foods. Nutrient design of such food items will need to be carefully considered and rigorously evaluated.

Food Objectives versus Nutritional Objectives

G. H. Beaton

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Reading can be hazardous to your health

Carroll Allen, Food Editor, Homemaker's Magazine

Presented at the Canadian Society of Food Scientists and Technologists Conference, Ottawa, 1976. Dr. Fraser Mustard, McMaster was a panel member, Jane Hope, moderator

In the last while I've read both these books — *Panic In The Pantry* by Drs. Elizabeth Whelan and Frederick Stare, and *Eating Can Be Hazardous To Your Health* by Dr. Jacqueline Verrett and Jean Carper.

Each is scientifically based, each is plausible, compelling. Each, if I hadn't read the other, would be convincing. As a consumer, I'm trapped between these books in a most unsettling way. I seem to have two choices — give up eating, or give up reading.

I'm particularly grateful for having the chance to speak to you because in the last few weeks I've also attended two food conferences in Toronto sponsored by various arms of the food industry, where I heard a good deal of dismay expressed about a new disease that's apparently catching on like wildfire — RAMPANT CONSUMERISM.

Until recently, I naively thought that RAMPANT CONSUMERISM was a rampage of consumer buying. Say the words RAMPANT CONSUMERISM and I immediately summoned up visions of battalions of outraged shoppers storming the supermarkets and department stores, brandishing fistfuls of money and demanding to be allowed to buy something, rent something — consume something.

The first few times I heard this trendy new phrase, I nodded in solemn agreement. Yes, I thought, we certainly are consumers on the rampage — consuming oil, gas, electricity, air, food, vitamins, cars, power boats, snowmobiles — the whole panoply of manmade and Godmade goodies.

Slowly I realized I was in a small time warp and this literal translation of the term was out of whack with what was being said. It slowly dawned that RAMPANT CONSUMERISM, when mentioned in indignant terms at business gatherings, means that the cynical consumer is asking impertinent questions about what he is being served up; he's lobbying when he thinks he's been deceived; sometimes, God forbid, he's even suing.

The implication is clear that these are pretty nasty things the consumer is doing in the course of this rampage and that he's furthermore both ignorant and misguided. Lobbying is the preserve of industry, which understands the subtleties of the game. Lobbying consumers are much too shrill — part of a 'vocal minority' who just don't understand that lobbying must never be loud — indeed it shouldn't be audible at all.

Perhaps that's why, at none of these conferences, was there a single consumer spokesman, rampant or tame, on any of the panels. Unless you

can count the group to which I belong — the food writers. Our questions were answered very politely and we were assured again and again that nothing bad is happening to our food supply — sugar coated cereals are not harmful — the U.S. studies on amaranth were unreliable — the synergistic effects of additives, though not known — are unlikely to be harmful, the cyclamate ban was the result of a powerful sugar lobby. Sometimes we had the feeling that if the consumer would just stop worrying, everything would be simple.

I don't think the consumer voice will ever be stilled again — nor do I think it should be. "Consumer paranoia" is another phrase that's bandied about quite a lot in the food industry. My dictionary defines paranoia as "mental derangement, chronic mental unsoundness characterized by delusions and hallucinations." Hardly any of my friends fit that description, yet they're all consumers. Even the industry people I've met who often seem to feel condescension is the only proper response to a consumer query, don't fit that definition; nor do the food scientists I've met, though they sometimes respond to a penetrating question as if it were a public belch.

So I'm glad to be here as a consumer — though I don't know how rampant I am; I almost never froth at the mouth but I know what my worries are as a consumer; and as a food editor and columnist, I have a pretty good idea what my readers are concerned about. I guess here is the moment to admit that I came to my role as Food Editor by way of my stomach. I'm probably on the periphery of the food business today because in my days as a reporter, I talked so much about food. In the last 5 years I've learned — sometimes more than I wanted to know — about what I loved so well — food. About what other people thought of it, how they cooked it, what was nutritious and what wasn't.

Right now, today, I'd have to say food additives are the prime worry. At the Grocery Products convention, most of the questions from the floor concerned additives and food writers reflect their readers' questions. When Dr. McKinley from Food and Drug wondered why obesity wasn't getting more attention, since it's ostensibly our number one health problem, I had to say it's because obesity is old hat — everyone KNOWS what should be done about obesity — even the obese. When a reader writes to me for advice with a weight problem, she already knows she's eating too much or the wrong things — she just wants to know how to stop — or she wants some hints about changing her diet so that what she eats won't instantly turn to bulges. Furthermore, I know pretty well how to advise her. The Canada Food Guide has been with us a long time — so have calorie input-output equations. It's really not too much of a problem advising the overweight, unless they're poor or old and living alone. Even then, ingenuity can usually provide some sort of alternative to a diet of lean steak and salads.

But when confronted with a letter like this one, the problem is different. And I quote:

"Even though I read package labels and lists of ingredients on products that I buy, I find I still buy blindly because I do not know what many of these additives and ingredients are. Therefore I am asking you to help me by explaining the following:

(a) chemical name; (b) common name, if any; (c) function of the chemical in the product; (d) possible side effects of these chemicals or function

in the body; (e) an explanation of ingredients such as vegetable gums; (f) an explanation of what imitation flavor is; (g) an explanation of terms such as hydrolyzed, hydrogenated, artificial flavor and how products are rendered hydrolyzed, hydrogenated, etc. (I'm still quoting). It appears almost as if the manufacturer wishes to be obtuse. So many products contain so many different chemicals that one needs a degree in chemistry to decipher the elements. For instance, one oatmeal muffin mix contains monocalcium phosphate and artificial flavor. Am I in reality getting calcium and phosphorous — elements that I need? What am I getting when I digest the artificial flavor? One salad dressing mix contains silicon dioxide. In particular, I am concerned about monosodium glutamate. Product after product has this compound and I understand that it has bad effects, but I do not know what these are." End of quote.

Out of my own knowledge and experience I cannot answer all of her questions. Oh, I could easily find out what silicon dioxide is and whether she's getting digestible calcium in monocalcium phosphate. I have my brains to pick and some of them are here today.

But she wants to know if MSG is bad for her. Which expert do I turn to? Do I quote her from *Panic in the Pantry* or *Eating May Be Hazardous To Your Health*? Do I say, "that MSG intake can irreversibly damage the brain of infant animals is well accepted now by any serious students of the neuro sciences," or do I tell her, "there was no evidence of the hazards from the reasonable use of MSG in foods for older children and adults except for those who are individually sensitive to the substances?" And if the question involves amaranth do I tell her that our Food and Drug Directorate regards it as safe in the permitted amounts, but that several other countries don't? Or do I just dismiss her as another Paranoid consumer.

I'm frequently told I wouldn't eat things if they weren't artificially colored . . . they'd look yukky and horrible. Well, try me. I still remember strawberry ice cream when it was only pink around the strawberries, indeed when it still had visible strawberries — I still remember peanut butter when I had to stir it every time I opened the jar. My children now — they won't remember. They're probably so used to the sugar in peanut butter that they think ALL peanut butter always tasted like that. Or would if I didn't every so often go and buy them some freshly ground. And if Dr. McKinley thinks I'm running a risk of aflatoxins by doing that, I hope he'll tell me so. If I have to choose between sugar and aflatoxins, I'll take sugar every time; but I don't see why I should have to make that choice. My children might think all strawberry ice cream HAD to be that noxious shade of pink all through in order to taste good, if I didn't manage to find some brands that aren't. But when industry says they flavor and color things 'by popular demand' — that they torture and bake and roast and dry perfectly good breakfast cereals so that they have to be enriched to bring their nourishment level up beyond that of the box they're wrapped in, I remember when they CREATED that demand and I wonder why we have to be deprived of the trace elements that are not put back — and the fibre that it now appears we needed all along. At least one processor has shifted to emphasizing our need for fibre to promote bran. I don't remember a brigade of irate consumers storming the barricades and DEMANDING that someone invent sugar coated chocolate crunchy munchies, or bread that's whiter than white and tastes like recycled facial tissue.

By now I'm sure you've got my gist, so I won't belabor the point. I'M AGAINST COSMETIC ADDITIVES — those chemicals that are introduced into my food to make it taste or look chocolatier than it really is.

Now preservatives are something else. If someone announced a lineup for food poisoning, they could count on me not to join in. But I often think we worship the tin god 'shelf life' a bit overzealously. If preservatives are used as a substitute for sanitary processing and careful food handling, it seems to me rather like suffocating a child in a life jacket night and day rather than teaching him to swim or fencing off the water.

One of the arguments I've heard in favor of lots and lots of preservatives and safeguards, is that many of the chemicals used for these purposes already occur naturally in other foods, so why should I object to a little more. Because — maybe I'm already getting as much of that substance as I need and as my body can cope with. Why do we have to tinker and tinker around the edges of the possible and seldom come to the conclusion that NOT EVERYTHING POSSIBLE IS WORTH DOING. If push comes to shove and the chips are down in the world food supply, not many will be eating much beef. Surely educating the public about protein alternates would be eminently more worthwhile.

Another argument for food additives which I regard as a red herring, is that since our natural food supply is already rife with toxins, why should we consumers worry about additives. Okay, so aflatoxins and solanines, and poison mushrooms and apricot pits are dangerous. But we didn't deliberately *put* them there. Because a man already drinks gin, which isn't good for him, does that give us the right to slip a little pot into his orange juice? A ridiculous simile? I'm not so sure. Just as with MSG, pot is at the centre of two contentious camps and persuasive arguments can and have been made both ways — it's quite harmless or it's brain rotting.

Surely the implication of this argument isn't meant to be that our food supply is already so treacherous that a few more chemicals, even if they later prove to be harmful, won't matter that much. If that is *not* the inference a paranoid consumer is supposed to take — if the food supply is *not* being tampered with for purely frivolous reasons — then somehow this message has to be put across to the consumer and "There, there dear, don't worry" is not enough. Are additives ONLY introduced into our food for a known health benefit? Are additives presumed innocent until proven guilty, or is it the other way around? Does anyone know what the cumulative effects or the synergistic effects of all these additives might be? I know all about the benefit-risk equation you people are dealing with. But I think the consumer is entitled to know what risk and for what benefit — to avoid botulism or to avoid streaky ice cream?

Though I seldom go to health food stores I understand perfectly why they've sprung up in such numbers, and why they're frequented by large numbers of consumers who couldn't by any imagination's stretch, be termed 'nuts'.

At the Grocery Products meetings in Toronto one executive told a tableful of food writers that:

"You can be sure all this natural food kick is nonsense because Adele Davis died of cancer."

That is just the sort of 'anecdotal evidence' these same people were dis-

counting when it came to linking food additives and hyperkinesis in children. The food buyer will not be ultimately silenced with condescending attitudes, evasions or snide attacks, but with the truth — even if the truth is “We don’t know.” A candid, “I don’t know” will inspire more trust than any number of dogmatisms or half-truths that later have to be recanted.

I said initially that additives were the consumer’s primary concern; there are others.

Cholesterol would seem to be pretty high on everybody’s anxiety list these days, judging from the letters I get. People are confused often about soft margarines and hard margarines, polyunsaturates and what role they play. But the message about cholesterol is getting through and people are beginning to add some polyunsaturates to their diet. I regard it as part of my job to get it through, along with the message about obesity and the need for exercise.

I believe there’s a new consciousness just budding toward full bloom — perhaps it started with the dismal findings of the Canada Nutrition survey. People are writing to ask how to use their vegetable water, or how to retain the maximum food value in their meals. Perhaps it’s been an offshoot of higher food prices or perhaps it’s just that the people who are determined to improve their diets are the ones who write. The ones that fill me with sorrow are from old people who are living alone on a small pension and WANT to eat well and not get fat but have trouble affording it.

Since the cost of food, in my opinion, is not likely ever to come down very much — as part of the 20% of the world’s population eating 80% of its food, we probably don’t even have the right to expect lower prices — we’re going to have to do something about feeding our own poor. But how to do it is a political question and nothing would induce me to talk politics in Ottawa. Along with resignation about high prices, I sense a new awareness that the mountain of goodies we’ve been gulping down so voraciously for the first three quarters of this century is dwindling and we’d better curb our appetites and stop being senselessly extravagant.

I neither need nor want a bag inside a box inside another bag. I can do without a plastic bag for my oranges and another for my tomatoes and another for the broccoli and a fourth to carry them home. And I don’t need an infinite variety of sizes in packages and jars either — surely small medium and large should about cover the situation. If I can return beer bottles, why not pickle jars? Why waste the precious energy re-cycling a perfectly good bottle that’s still in the prime of life? Transporting it, sterilizing it, and refilling it might even create a few jobs. And whenever an avalanche of brown paper bags cascades all over my head when I open the kitchen cupboard, I march them back to the store and use them for the next load of groceries. When I first started doing this, a couple of years ago, I was obviously regarded as a harmless lunatic. Now, I notice with some smugness, I’m greeted with gladsome cries of welcome, paper costing what it does.

Along with a surfeit of jars and bags, I don’t need musak in my supermarket or checkout boys dressed like the Yale Glee Club. All that ambience is expensive — I’d rather have cheaper groceries. And since I was originally hooked on food because of its taste — I’m having a tough enough time adjusting to climate controlled chicken that doesn’t taste as chickeny as it

used to when it pecked around the cows' hooves for a living. I'm glad to get my fresh tomatoes in the winter — don't think I'm not; but I wish I couldn't taste their heightened cellulose content. And I suppose I should be grateful about the new cabbage that can be kicked all the way to market without showing the scars; I try to be, but I'm not. However, I'm prepared to accept these necessities along with pesticides and chemical fertilizers (so long as I don't have to eat the residues), as part of a SERIOUS effort to augment the world's food supply. They're not in the same league as 'snap crackle and pop' or glutinous pink ice cream. But try hard not to do me any MORE favors this year.

I have a horrible feeling that right now in the THINK TANK of the new products division, somewhere, someone is thinking up an unpleasant surprise for me. Picture, if you will, this little scene. (You can tell I'm old fashioned or I'd have said 'scenario'). Let's use a brewery, instead of a food processor to avoid accidentally hitting any raw nerve ends.

Let's suppose that Hockenslochers' Brewery is anxious to increase total volume; and let's imagine that Allen's Brewery is equally eager.

"Hmmm-muses a bright young man at Hockenslockers'. Millions of people drink beer every day. All that alcohol can't be very good for them. But suppose we could take the alcohol out of our beer and replace it with cod liver oil. We could promote it as a Health Beer.

Meanwhile, in Allen's new products division, the script might be going something like this:

"The nastiest part of drinking beer is carrying home all those heavy bottles and snapping off all those caps. But if we could dehydrate the malt and hops and package it with a little vial of alcohol and a carbonating pellet, we could call it a CONVENIENCE BEER.

So, please, no more favors this year.

There are at least two things I haven't touched on yet that I'd like to.

Nutrition and food poisoning. I'm in favor of the first and against the second.

Preaching nutrition is the biggest part of my job and it's very heartening to see industry becoming more nutrition conscious — I've just come from yet a third food seminar where General Foods sponsored talks by experts in the public health field on every aspect of nutrition from birth to grave. Even when, as in a series on ethnic cooking I'm doing now, nutrition SEEMS to be secondary to taste, I always have balanced, nourishing meals in the back of my mind and I seldom miss a chance to slip in a little nutritional message if I can do it without bogging the whole piece down. And at Homemaker's, we have a column every issue that deals with readers' questions and spreads the nutrition gospel.

As for food poisoning. I've only suffered from it once, that I know of, and I wouldn't care to repeat the experience. It was at a takeout food place where I foolishly bought a quiche that wasn't either hot or cold — and it was loaded. Surprisingly, and this must mean our HEALTH PROTECTION people are doing a good job, we seldom get queries about food poisoning. The odd time we hear from someone with a bulging can who wants to know if she should use it (and we say NO as hastily as possible) or from someone who wants to preserve something from the garden and we pass on

the latest information about how to do that safely. Usually sometime in early summer, we manage to work in something about Sunday school picnics and the risks thereof, but either people are not being poisoned or they're being poisoned so slowly they don't know it. For a while we had quite a few anxious letters about bacteria counts in ground beef and there's a certain suspicion abroad yet about hamburger, but nothing you could call a ground swell.

I don't think I'm wrong about the ground swell toward conservation — I hope not. I'm probably one of the most experienced and discriminating garbage sorters of all time. I married a man who was overnight bitten by the gardening bug — 25 years ago — and resolved to turn a suburban patch of modelling clay into a sort of temperate-zone Garden of Eden. So I was saving kitchen garbage for composting, when the only place I'd ever seen the word ecology was in a dictionary. I learned to save grass clippings for mulch and screech to a stop beside any untended manure pile and never to get excited when a delivery man came to the door. It was never long stemmed roses; it was either melorganite or humus or dried chicken manure.

All this is leading up to the point that I think I recognize another saver when I see one, and I think I'm seeing more of them than I did even 5 years ago. Perhaps, by being almost drunkenly wasteful in the technological age, we've sobered ourselves up and are about to get on with the hangover. I hope so and I hope the new technological bandwagon is leading toward reviving our farm land from under its shroud of asphalt!

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Community Living— Today, Tomorrow

*Dr. J. T. Lemon, Director, Program in Community Living, Innis College,
University of Toronto*

Presented at the C.H.E.A. Conference, July 1976

What is the world coming to? Happy technocrats optimistically foretell future marvels — as for example, in the latest *National Geographic*, of colonies in space for several thousand people.

But technocrats are outnumbered by those making dire predictions about the future. Several vocal groups single-mindedly focus on population growth, warning of impending doom. The Club of Rome, for one, says there are just too many people. Some even say we must adopt a life boat ethic serving the strong — meaning Americans. Resources are running out. Thomas Malthus is, for many, the patron saint, albeit a morbid one. Controllers of population, unfortunately, ignore what the world's most populous country, China, has been doing.

Then there are the environmentalists who warn us of the deterioration of quality: water, air, fluorocarbons, the disintegration of the ozone layer, the adulteration of food, the loss of animal species such as whales thus affecting adversely the balance of nature, industrial diseases caused by exposure to asbestos and the like, and further, asbestosis among workers' families and the rest of us, radiation, mercury poisoning, etc., etc. What we are hearing is not pleasant and carries a sense of foreboding.

Not only the absolute Malthusians and environmentalists, but others speak of the grave difficulties, focusing on the economy. Barry Commoner, for example, in the *New Yorker* (Feb. 2, 9, 16), argues persuasively that the economic system we live under has such skewed priorities that we will run out of capital — run out long before we run out of resources.

Then a few say the future looks bleak for justice. Look at apartheid in South Africa. Look at terrorism in Brazil. But look here too. Contempt for lower ranks in society and animals is rampant. Among others Commoner expects even greater injustices because the system to speed up the tempo in the wrong directions, someone and something has to suffer. Contempt will extend not just to whales, peregrine falcons and people on welfare, but far up the social scale. White collar workers, not just manual workers, will increasingly bear the brunt of injustices.

There is a sense of impending doom; if not that strong, at least there is a sense of uneasiness.

Yet we do hope, and we are not without the human resources to prepare for the good life within the uncertain future. Before I discuss actions I

think are needed, we have to assess our attitudes toward the environment and toward one another. To do this we have to survey our history in North America, of western Europeans in particular.

The past two hundred years or so have been the age of individual. As the age of the individual it has stressed freedom, free choice, independence, and openness. Gradually the age unfolded. The "discovery" of the New World by Europeans was a key event, as were the discoveries of seventeenth century scientists and writings of John Locke and Adam Smith. The process of the industrial revolution unlocked resources through mining and the factory system (even if enormously costly in human terms). The age of the individual has been an age of enormous productivity.

If Europe and especially England was the spawning ground, North America has been the age's complete model. The openness of the environment, the availability of resources aplenty reinforced the view that everybody can get into the act. So in the nineteenth century the epic of American settlement gripped not only Americans, but Canadians and emigrants from Europe. The land provided opportunity. Our ancestors were free. With this came the reinforcement of the idea, espoused by Adam Smith and others, of the free market, "the unseen hand" by which everyone being competitive, everyone would benefit. And private property was to be the mark of this — every man would have it. The free self-regulating market fit perfectly the ideology of a free people occupying an empty space (empty except for some pesky Indians and irrelevant bison).

Such are some of the dominant historical pressures bearing upon us — and are the root of our current difficulties, feeding uncertainty even despair. And strange as it may sound, a basic problem with our social system is that it has been successful, far too successful. We have an abundance of goods enjoyed by far more members of our society in terms of quantity than any society ever to exist (as far as we know) on earth.

Why does it present a problem? Let me specify six aspects of the issue: the failure to develop a sense of limits, the large scale of production, excessive specialization, the world wide scope of the system, the inequities despite abundance, and to return to Barry Commoner, the wrong priorities. Injustice is paired with unmanageability.

First of all, the failure to develop a sense of limits. Everyone can capture a piece of land for his own possession. The piece of land provides independence. Independence allows one to sell and move on. These become passionate virtues. Independence becomes a passion. Possessiveness becomes a passion. Mobility becomes a passion. These virtues developed as the social purpose of Americans, North Americans. These boil down to everyone for himself, and everyone can do anything. Our ancestors opted to get away from feudalism with its limitations, but in doing so we have yet to learn what limits there are.

The trouble is that now we finally know the pie is limited. By 1890 or at least 1910 all the best land was possessed, the Pacific and the north stopped it all. But instead of facing the reality for several decades, diversions perpetuating these illusions came along: the car and what we call consumer goods giving us the comfortable 20's and 50's when we tried to forget what was wrong. And the car not only allowed mobility — movement feeding the illusion of independence — but it also fed the old feeling

of possessiveness. Car ownership bolstered those without much else; you remember when we thought all blacks in U.S. cities drove Cadillacs. The car also allowed for the middle-class 50 to 100 foot lots in suburbs. These lots created a further illusion of pastoral greenery in the suburbs. Of course, the grass was cut by power mowers.

These nineteenth-century virtues of independence, possessiveness and mobility are still with us. We act as if we were still on the frontier. We become paranoid if public housing intrudes into our residential districts. We worry about throw away cans but we waste; waste energy, waste our birth-right. We worry about this waste but we blame somebody else — usually the poor, unions or government, anything but a square look at our own culture, our own ideology that feeds a psychology of possessiveness, independence and movement demanding every more energy, more and more through machines.

We are indeed ill-equipped to put limits on ourselves.

The second major problem arising from our past is that of large-scale production. The great ironies of the age of individualism are the rise of the factory, then the corporation, then the multinational corporation. Ever increasing numbers of people are locked into these systems. In the factories of Manchester, surplus farm labourers were locked into place, and now the majority of people work within large organizations — large unions and large governments being a response to large corporate structures. This is indeed ironical because on the frontier people felt free and independent.

With the large unit came excessive specialization of people and machines, a third problem arising out of age of individualism. The white collar typist is as over specialized as the assembly line worker who tightens one screw, both as much as the operative in the sweat shops of 1900 or the cotton mills of Manchester. But we thought machines would relieve all of this. Of course, for two decades or so we have found ways for many to escape the boring tread-mill — the expansion of education and the arts. Yet the professionalization of sport through media prestige and money to pay the few violent specialists grows, as the many spectators lust for blood while their own blood is loaded with fats and alcohol. So instead of manual work few can indulge in (it seems strange to put physical work that way), physical exercise is paraded as a panacea for prevent heart attacks. In short, we have developed a productivity system of goods and services that is allowing human energy to lapse and lie idle while we use ever increasing amounts of inanimate energy, and at ever increasing cost, indeed, ever accelerating cost. We can't last if we continue in this direction.

Fourth, the large systems now cover the world. Factories are opened and closed depending on subtle differences in labour costs, material costs, transportation costs and political conditions. But these are not considered in terms of energy cost, only in terms of the profit expectations of multinationals. Consider development in Toronto. Here we have witnessed massive construction of office buildings and hotels many of which now are nearly empty. Who plans all of this? We don't. The compulsion comes from the investors: the money comes from Kuwait, Italy, Britain, and, I have heard, even from Indonesia. Do these investors care what their interest does to Toronto? You know the answer — why don't they invest in their *own* countries? One gets the feeling that it is all out of hand.

Despite the abundance of goods generated by this great system, they are not distributed equally. My fifth point is that our individualistic heritage encourages contempt all the way down the social scale. In Ontario recently, Maxwell Henderson told the province what it wanted to hear. Ontario spends too much, he said — so it came as no surprise that social welfare, day care, support for municipalities, for public transit — all items that to a degree reduce inequities — were cut back.

Why did Henderson tell the province this? Well, the bankers in New York said we were overspending. Our triple A credit rating was vulnerable. In short, capital was becoming short. We'll see more shortages.

As capital is harder to come by, the single mothers with children, who make up the bulk of welfare recipients — some of whom could work if we pushed relatively cheaper day care rather than welfare — will bear the brunt. But ever increasingly, people nearer the middle will be deprived. Even now, who earning under \$20,000 a year can buy a house in Toronto? And municipal taxes will now go up rapidly adding to the burden of the lower middle-income home owner. Of course, he will be tempted to blame welfare recipients. But then later unionized workers will feel it, especially service employees, and then the teachers.

Teachers present a particularly interesting case of those who have felt deprived. Many teachers, it seems, feel deprived for reasons other than money. Why? I venture to suggest that for a generation teachers have been scorned as the lowest form of professional life: "those who can't, teach." If what I say is true then little wonder teachers are angry.

(But the unionization of teachers, the collective action of teachers does give some hope that widespread contempt toward them can be counteracted.)

Contemptuousness arises when no clear social purpose exists beyond the individual. Contempt for others is bred by contempt for oneself. Why are people contemptuous toward themselves? All the striving for individual attainment for success leaves many stranded, indeed all stranded, in isolation.

The final and sixth difficulty I wish to raise is that of priorities. This brings us back to Barry Commoner; Commoner argues that we pursue the wrong priorities — wrong in terms of energy consumption, because the final test in production is profit not Social value. So we have cars and planes instead of trains. Electricity produced by nuclear energy and non-renewable oil rather than directly from the sun. Artificial fertilizers instead of manure. Chickens and eggs are raised in factories — never experiencing direct sunlight. Buildings dependent on air conditioning instead of letting in the sun and air. Baseball played on astroturf, on synthetic turf! Reading Commoner's views in the *New Yorker* juxtaposed with a Cadillac advertisement makes the point dramatically. We question why all this can happen. It appears that we have lost touch with our correct instincts and so with nature. Our long history of domination over nature — the lack of sense of limits — has brought us to a very precarious state.

Commoner provides the connecting arguments. In agriculture at least, today for every unit we add of inanimate energy we get a smaller proportionate return than on the previous unit of input, and we are still adding so that few work in agriculture. In fact, in agriculture some scholars say we are

getting fewer units of production than what we are putting in! So the capital cost mounts at an ever increasing rate as returns per unit of capital decrease and the pursuit of capital becomes even more frantic. In the U.S. business analysts predict a need for \$1.9 *trillion* over the next decade as compared to a third as much, \$670 *billion*, over the past decade.

In the final analysis, we are working against nature, Commoner says against the second law of thermodynamics, the law that states that energy has to be used efficiently. Our priorities are wrong. Our promethean instincts have the best of us. We are, as it were, pushing stones uphill. We have lost our *managerial* sense, we are not efficient. Combined with *injustice*, the system is going astray.

I have sketched out a future fraught with danger, violence and joylessness. We will indeed be freezing in the dark, beginning with the poorest, but only beginning with them. The age of individualism is over.

* * *

What can we do? We are acting, making history for better or worse. Whatever we do we act at different levels of society. I will speak of these different levels: the individual, the community (on which I put most stress), and the wider institutions, and from now on I will speak of positive signs.

First, the individual level. If the age of individualism is over, strangely enough we can now spend more time concerned with individuals. If the age of individualism promoted excessive possessiveness or, put bluntly, the blind pursuit of individual success, it did not concern itself with individuals, as persons. But now we have some positive signals. Hope springs from the power of Vietnam resistance in the United States, of individuals willing to say no. Hope also springs from our increasingly sensitive feelings toward the handicapped, the disadvantaged in Ontario society. In very small ways we are beginning to support rather than reject the lowly. It is heartening to see a city lower curbs at street corners to provide ramps for those in wheelchairs. It is heartening to see parents keeping their retarded children. It is heartening to see group homes for the mentally handicapped rather than the large institutions. It is heartening to see individuals concerned with the kinds of food they eat. Many of us now doubt that the pursuit of consumer goods should be carried on quite as fervently, though we are pressured to do so.

The end of the age of individualism and the problems it raises presses us to collective action whether we like it or not. Historical forces gave rise to the corporation, to unions and to extensive government intervention in the economy. Historical forces are pressing us today to stress community action, bringing people together into work on a whole range of issues. The programme in Community Living at the University of Toronto is a step toward rational action and critical theory in *local* community life. We are responding to a recognition that large scale organizations, large scale production systems have limitations, indeed can be detrimental to health and well being. So we are engaged with questions dealing with the community role in health, law, education, housing, planning, media, ethnic groups, neighbourhood groups, the work place, family and child study, as these are expressed today concretely in the Toronto context. Only dimly do we see how these connect with one another, but our instincts are that they do and will.

For example, in primary schools we see a slow but definite move toward a network of cooperation among teachers, parents, principals, trustees, and paid officials. It has to be a slow process because no one is sure what the proper structures should be. A greater recognition that the social public purposes of education converge with the growth of individual, and the increasing collective strength of teachers, point in a positive direction.

The same can be said for cooperatives and other self management schemes such as neighbourhood planning and worker's participation. Cooperatives are experiencing strong growth today in the housing, food, finance (through credit unions), and other areas, even though their share within the total economy remains small.

I have touched on a few aspects of community life now appearing in response to the great problems of our time. Another way of looking at the current moves is to consider technology. As we saw above the massive use of inanimate energy is drawing us more and more deeply into the mire of unmanageability: even developed countries are obviously in economic difficulties, for example, Britain, the Soviet Union, and the U.S.

So many today are talking about *intermediate* technologies, a term used by E. F. Schumaker in his book *Small is Beautiful: Economics as if People Mattered*. This view points to technologies using less inanimate energy and using more human energy, developing organizational structures on a smaller scale, a scale that means more face to face contact. This view is not asking for a return to the stone age, but predicts we will if we keep up our present pace. To me, as an urban dweller it means constructing buildings that are smaller, renovating old ones, building light rapid transit rather than expensive subways, planning medium density low rise housing rather than low density sprawl or high density high rise, developing new towns instead of pulling everyone into Toronto.

We can contribute individually by engaging directly in the *production* of goods and in the way we *consume* goods. We have to become *managers* since the managers are losing touch. Every square foot we use for growing vegetables, and every time we cut out a meal based on meat we are striking a blow for intermediate technology and for our own health. Every bit of pressure we exert on local, regional, provincial, and federal politicians for sane land use and transportation policies, those that reduce inanimate energy use, reduce urban sprawl, and increase justice, we are acting for ourselves — for everyone in the world and for the delicate ecosystem of the world. Strong public awareness of the loss of good agricultural land in Ontario already points to a greater rationality in these directions. Rational government action is needed to bring about intermediate technologies.

We do act. We make history, as individuals, as members of families, as members of local groups, and as citizens of municipalities, of provinces of Canada and indeed of the world, this very small world. The age of possessive limitless individualism is passing. Either we move to develop intermediate technologies for production, to encourage participation by everyone for power, to distribute goods and service justly, *or* the horrors of Nazism will be on us many times over and cancer will spread. In the last analysis, we must be confident of our species living in harmony with other species and with inanimate nature.

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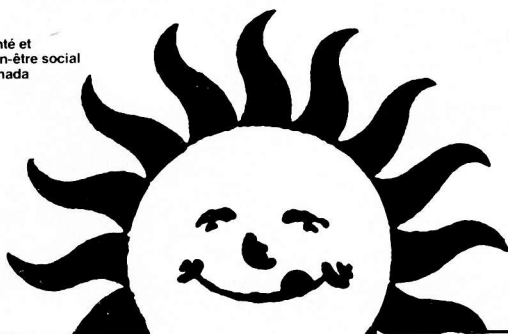
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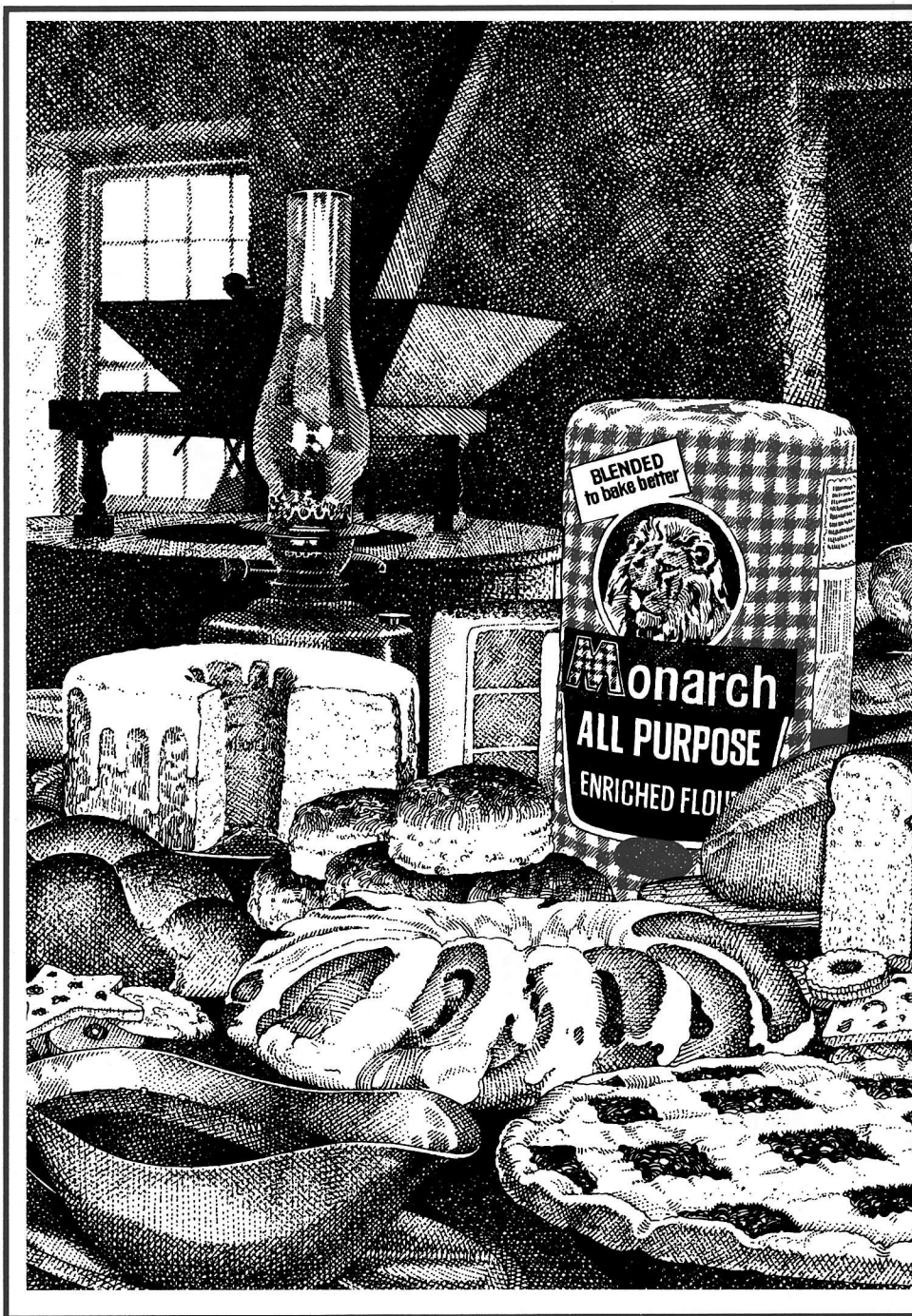
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Protein Technology— Retrospect and Prospect

*Dr. A. D. Odell, President, Canadian Vegetable Protein Association
Presented at the C.H.E.A. Conference, July 1976.*

There can be no denial, in affluent societies, at least, that the record of mankind in improving the daily lot of the individual has been impressive, indeed.

Applied technology has permitted the human race, in what is no more than a single heart-beat of the earth's total history, to emerge from the cave, domesticate the wild, conquer much of disease, harness the atom, and now to stand gazing proudly aloft at space conquest, while still only ankle-deep in sewage. Taken at face value, that is probably not too bad a record.

Since a major component in the equation for a good life is the ability of the individual to obtain adequate supplies of good quality food, then it is probably also true that there is not too much wrong with the modern Canadian scene, where the average family spends only about 20% of its income on what is certainly very high quality food. However outraged all of us might get each time we visit the supermarket, food is still a bargain in affluent societies, unless you are on a fixed, low level income.

In reality then, the only major concern which intelligent Canadian consumers need have in the nutrition sector at the moment is what is nonetheless a very deadly form of malnutrition — that of over-nourishment and the resultant obesity.

Much of the rest of the world would be delighted to have that problem. Two months ago, almost un-noticed, the world population slid past the 4-billion mark. In 25 years or less, it cannot escape nudging the 7-billion mark. So what? So, the relentless search for more food for the world must accelerate, and even with the combined best efforts of all technologies, the food gap will continue to widen. The political and socio-economic consequences of the increasing under-nutrition and malnutrition in the so-called "Third World" nations are ominous indeed, and affluent societies can neither remain aloof from, or be unimpacted by, the outcome. The stark realities are that many millions of people now living, and many more not yet born — will die, prematurely, from the direct or indirect results of simple under-nutrition, or from protein-calorie malnutrition.

A far greater number will manage, somehow, to survive in a murky twilight of constant physical and mental ill-health. Such statements may sound like over-dramatization. They are not. They are a coldly factual translation of the hand-writing on the wall for a large segment of the exploding world population.

The growing, and justified, concern for the future well-being of man has its sharpest focus on the limited availability of high-quality dietary protein, from classical sources. The exponential increase in modern scientific sophis-

tication in the physical and life sciences is, unfortunately, more than matched by a parallel increase in total human numbers. The net result is a widely publicized and deadly serious daily dietary "protein gap" in all but the most affluent nations. The most nutritionally vulnerable sector of society is the human infant. The extremely high death rate in pre-school children in under-developed and over-populated nations is bad enough, but the stunted physical and mental development of those many millions who do survive has even more serious implications for the longer term, dignified survival of civilized mankind.

The global quality of life, in terms of the all-important aspect of nutritional well-being, is indeed under increasing future threat, and the governor of this self-destruct system is the availability of digestible high quality dietary protein.

If you attempt to forecast the dimensions of the future protein gap by plotting the curve for population growth, and another curve for increasing food production by classical methods of agriculture, animal husbandry, and other components, you will find that these curves grow steadily farther apart. Measure the distance apart at a given future time and you will get the wrong answer. Why? The pressure on available high quality protein supplies is not merely increasing in proportion to the numbers of people (although this is certainly a major factor), but boding extra future pressures are the following, which is, by no means, a complete list:

- (1) Increasing affluence in new sectors of the world — this is always associated with increased demand for better food.
- (2) Diminishing acreage of arable land, not only on a per capita basis, but in acreage total, due to urban and suburban sprawl, airports, freeways, and poor water conservation measures — to name just a few factors.
- (3) High cost of extra energy inputs — whether as tillage motive power, fertilizer, pesticides, or moving the crop away from the farm gate.
- (4) The future prohibitive costs of feed-lot finishing of cattle with efficiencies in protein return of less than 10%, and the shrinking acreage of range-land as a viable alternative.
- (5) The likelihood that the temperate zones may cool off by a degree or so from their current annual average — which sounds innocuous, but can be disastrous to long-maturing crops in our own Prairies, for example.

And so it goes . . . why belabour the list? What is important is what can be done to cushion the future shortages?

The technology to which you have been exposed at luncheon today, in the form of texturized vegetable protein foods and extended foods is part of a possible answer. The new foods and the extended natural foods which have been presented on the menu all arise from standard agricultural crops — crops which have been processed to create concentrates in such crops. Let me repeat that . . . *NATURAL VEGETABLE PROTEIN CROPS* processed in such a manner as to *concentrate* the protein component. There is thus nothing ersatz, or synthetic about the resultant product.

An analogous exercise is to start with an orange, and remove the peel, seeds, and most of the pulp, evaporate off much of the water, and freeze the resulting product. You have frozen orange juice concentrate — hardly synthetic is it?

Start with wheat flour, and remove the starch, soluble components, fine bran particles, and wheat hairs, and you have left wheat gluten protein, concentrated *seven* times from the 12% in the flour — to an 80% level after processing. Do the same thing with soybeans, which contain about 40% protein, as harvested. Remove the hulls and extract the soybean oil, and the protein concentration rises to 50%. Remove the water-soluble components, other than protein, and the protein concentration jumps to 70%. Remove from this 70% material the natural fibre and indigestible and insoluble carbohydrates, and you have a soybean protein isolate of 95+% purity. The name of the game then is *concentration*, purely and simply.

There are only very small mechanical losses experienced in moving from 40% protein soybean to 95+% soybean protein isolates in the hardware used. The same is true for the concentration of wheat flour of 12%, to wheat gluten of 80% purity. Be critical and assume the protein yields across these processes are only 70%. Feed the same beans or wheat to the steer to get meat, and the yield is only about 7% — an obvious ten-times advantage for the concentration approach.

The food chain from field to human stomach for soybeans or cattle feedlot grains is thus ten times shorter — or put another way, ten times as much human food is made available per acre of farm land. The same sort of thing is also being done today using cotton-seed, field peas, fababeans and sesame seeds. The techniques for using rapeseed, sunflower, oats, alfalfa, and other crops in the same manner can be expected to be perfected in the next few years.

The products so produced are fine powders, or grits, or flours — amorphous, textureless, bland, functional, but pretty dull and uninteresting as menu items by themselves alone. I suspect, however, that home economists hardly need to be told how these powders can be incorporated into such classical menu items as soups, sauces, meatballs, meat-loaves, high-protein baked goods, etc. Today, however, you have been offered an extra degree of sophistication. The amorphous, dull, but nutritious powders have been given a *texture* to make them more familiar and appealing to look at and to bite into.

There are two general classes of products — one is meat analogues which are intended to simulate meat, fish or poultry by themselves alone. The other is the extenders for meat and poultry, usually produced as granules, similar to ground meat, which blend smoothly and cosmetically with a hamburger patty, for example. There are varying degrees of sophistication, or elegance, if you will, associated with how proteins are textured and how the fats, flavors, vitamins, minerals, and colors are incorporated.

The most elegant technique, the Cadillac of the trade, is to spin the protein into endless, extremely fine mono-filaments, resembling the fine muscle fibrils which comprise most meat tissues. Simpler, and less expensive, are methods which moisten the dry powders with water and by extruding under heat and pressure, result in a semi-puffed, expanded, porous product.

Our Federal government recognizes both classes, the elaborate analogues or simulated meats, and the simpler class of extenders. Regulations are now in place which govern the protein content after rehydration prior to use, the protein rating in terms of nutritional impact, and the

mandatory levels of vitamins and minerals which must be added. The thrust of these regulations is that textured protein meat simulators and extenders must have approximate nutritional equivalency to meat, which is as it should be. These Canadian regulatory requirements of nutritional equivalency to meat mean that, in Canada, they can be used without nutritional sacrifice, either as such, or at any degree of extension of natural meats.

South of the border, similar products have long been approved for school lunch programs, or for retail sale. Since, however, the U.S. standards are considerably lower than our own, restraints are placed on the amounts that can be blended with natural meats.

In the case of the school lunch program authorization, for example, an upper limit of 30% extension of meat is enforced for the standard, extruded, expanded product which is manufactured from 50% protein soy-bean flour.

The Canadian Vegetable Protein Association, in collaboration with the Department of Industry, Trade and Commerce and other federal departments, intends shortly to launch a public-awareness campaign designed better to acquaint the purchasing public with the merits and availability of textured vegetable protein. This publicity campaign will be timed to coincide with ready availability of products from meat processors and the corner grocery. To do otherwise would be premature, anti-climatic, and frustrating. While cost savings vs. natural meats will be apparent, the genuine virtues of meat extension with textured vegetable protein products lies in other aspects.

Extended meats, for example, tend to shrink less during cooking, are more moist, taste better, cook faster, are lower in fats and cholesterol, and have reduced bacterial loads — to mention only some of their attributes. Use them, by all means, with no hesitation or restraint, as directed, and you will be more than pleased with the results. It is literally possible to improve on natural meats by this methodology.

In retrospect, then, some aspects of protein technology have made only marginal advances, since we still continue to stuff the stomachs of our domesticated animals with the same forage, and in much the same wasteful manner, as did our Neolithic ancestors. More recently, protein technology has had thousands of man-years of effort devoted to it, to arrive at the current state of the art, whereby proteins can be extracted from both conventional farm produce and from vegetable sources not normally regarded as human food. The net result is greater efficiency, palatability, shelf stability, and improved nutritional impact.

Already *blends* of proteins are being utilized for greater protein efficiency ratios and this trend will continue. Wheat-soy blends are better, for example, than either component alone. In the future, greater elegance and sophistication is already in sight for this class of products. Forage crops, or currently unused oilseed proteins will be moved up the rungs of the dietary ladder for direct human consumption. I have been fortunate to have been a pioneer in this discipline. It is rewarding, indeed, for me to be able to confirm that most of our initial, rather heady predictions for textured vegetable proteins are being borne out.

TARGET!

MARCH 1978

Report of Intersectorial Meeting Number # 1 Recipes

Wendy Sanford, Chairperson, Marian MacDonald, Secretary, CHEA Metric Committee

Since recipes involve input from many sources and are used by various groups it became apparent that a meeting of related interests and industries would be beneficial.

CHEA was instrumental in initiating a seminar for this purpose with favourable support from Metric Commission Sector 9.5.

Related sectors and associations were contacted and eagerly participated in organizing the event. The Metric Commission agreed to sponsor a one day programme as an intersectorial meeting which was held in Toronto in January, 1977.

The overall objective was to bring together the various groups to establish practical target dates for introduction of metric recipes, package directions and package recipes. It was also hoped that those who attended would:

- become aware of available and current resource material.
- identify a uniform approach in presenting metric recipes.
- communicate recommendations and information to their groups following the meeting.

The participating groups represented the food industry — Packagers and Processors, Home Economists, Printers and Publishers, Advertisers and Public Relations firms, Dietitians, Restaurateurs, Chefs de Cuisine, Retailers, Cookware Bakeware Manufacturers, Appliance Manufacturers, Departments of Consumer and Corporate Affairs (Consumer Consultants) Agriculture Canada and Environment Canada.

The attendance was restricted to about 100 delegates, so preparing the invitation list was quite a challenge. The representatives were selected on the basis of their involvement with metric activity, whereby they would be responsible for communicating news of the meeting to others in their industry, and those who in their line of work encounter or produce recipes.

The response was excellent and registration fully booked before the session. We were delighted to have had representatives from Vancouver, B.C. to St. John's Newfoundland as well as the U.S. and regret that not all those who applied could be accommodated.

The session started with a Metric Overview. Mr. Ray Chadsey as Chairman of the panel stressed the objectives of the meeting and suggested some target dates to be considered. Margo Oliver, Weekend Magazine, Brian Phil-

cox, Metric Commission and Stan Wieczorek, Federation of Chefs de Cuisine made up the rest of the panel. Each outlined the role of metric recipes in their respective areas.

After their introduction the group dispersed into four workshop sessions, which were repeated in the afternoon. Each workshop had several moderators to facilitate the discussion. The workshops planned to cover the various interests represented, were:

(1) Recipes for Packages and Labels

Moderators

Ray Chadsey, George Weston Company Ltd.

Sally Henry, Maple Leaf Mills Ltd.

Margaret Fraser, Freelance Home Economist

(2) Recipe Development

Moderators

Margo Oliver, Weekend Magazine

Wendy Sanford, Corning Glass Works Of Canada Ltd.

(3) Quantity Recipes

Moderators

Stan Wieczorek, Federation of Chefs de Cuisine

Kristine Thompson, St. Michael's Hospital

(4) Promotions and Opportunities For Consumer Awareness

Moderators

Joan Fielden, Dominion Stores Ltd.

Bonnie Cornell, Chatelaine Magazine

Terry Goodyear, Grocery Products Manufacturers Of Canada

Frank Moran, Steinberg's Ltd and Retail Council Of Canada

Recommendations from each group were reported to the summary session following the workshops.

The following are highlights from the summaries given for the various topics.

(1) Recipes for Packages and Labels.

- by 1979 packages should begin to show metric only in recipes and directions, no soft conversion.
- that target dates will follow change of package size depending on the product. Recipe and directions are to coincide.
- CHEA to prepare list of critical food products that are essential to recipe development.
- encourage metric recipe development to proceed.
- Metric Commission to consider a theme campaign on 'Metric in the kitchen'.

(2) Recipe Development

- over half the group attending each session indicated they were already working with metric recipes.
- the process of adapting recipes for metric was covered (see CHEA Journal October 1976)

- Importance of U.S. liaison was mentioned.
- identified that those not already working on recipes, should begin as soon as possible since it takes time to accumulate metric recipes.

(3) Quantity Recipes

- the general feeling here was that the quantity food area has long needed a workshop. They plan to continue the workshop in September at C.R.A.
- there is a need to hold a joint meeting of quantity recipe and equipment people.

(4) Promotion And Opportunities For Consumer Awareness

- A target date of March 1978 was recommended for simultaneous focusing on metric recipes by the media such as food editors, writers and others. (one of the groups also mentioned March 1980)
- The introduction of metric recipes needs to be preceded by a national awareness campaign by the Metric Commission which will provide homemakers with the basic metric information to help them understand the new measures and using metric recipes.
- A comment was made that there is a tendency to underestimate consumer intelligence. Measures have been available in stores for over 1 year.

CHEA Metric Committee has submitted a report to 9.5 sector. Our recommendations are:

(1) Food editors should be involved as soon as possible by:

(a) familiarizing them with metric recipes in the proper format.

(b) encouraging them to feature articles *now* that acquaint consumers with what changes are actually taking place thereby reducing the 'fear of the unknown'.

There is considerable speculation in the public sector about having to discard or convert existing recipes, plus purchasing new bakeware and appliances which needs to be put in proper perspective.

(2) March 1978 be featured as "Metric Recipe Month". (Tie in with calendars, promotions etc.)

(3) For general recipes, the overall program will proceed as follows (similar to outline initiated in 1974).

- | | |
|------------|--|
| — Present | — introduce some metric recipes |
| — 1977-78 | — gradually increase ratio of metric to customary recipes. March 1978 to be designated as Metric Recipe Month. |
| — Dec 1978 | — ratio of metric recipes equal to or slightly ahead of customary. |
| — 1979 | — phasing out of customary recipes on a decreasing ratio. |

- 1980
- all recipes presented in metric form

(4) Package directions including package recipes

- Jan. 1979 — directions and package recipes in metric only to commence.
- rational — if published recipes are primarily in metric only there will be better acceptance of metric package directions and recipes.

It is recognized that the introduction date of specific foods in metric sizes will influence the timing of recipes and package directions i.e. gelatin, yeast, baking chocolate or any food required in a unit quantity. Recipes should compliment these dates.

It is critical that application of metric recipes not be delayed. They can serve as an excellent vehicle to disseminate metric information. The metric household measures are now available and most recipes can be prepared in a metric version. These measures will be required for many functions other than for recipes.

Several companies have used metric recipes in their releases and more plan to do so in the near future.

Let's keep the ball rolling! ! !

Now the question.

Are you making a contribution towards an efficient metric change over and supporting your profession?

STYLE GUIDE FOR COOKWARE — BAKEWARE

A style guide has been prepared by a task force from Sector 2.23 of the Metric Commission listing recommended metric sizes for cookware — bakeware. It was published by CHEA and is now available from the national office.

Send \$2.00 per single copy or \$15.00 for 10 copies to: CHEA National Office, 203 — 151 Slater St., Ottawa, Ontario K1P 5H3. Money must accompany orders.

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Canadian Home Economics Association

FEES ARE DUE MAY 1, 1977

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WHAT'S NEW

by Kay Spicer

MICRO-ORGANISMS MANUFACTURE FOOD

In Saskatchewan they're planning to put "bugs", that is micro-organisms, to work. Today, in Canada, we depend on them for booze, beer and baker's yeast. Elsewhere, micro-organisms, fed on starch or sugar or a little oil produce antibiotics, fuel alcohol, high-protein food and industrial enzymes. Bacteria can do these things better than chemists says Andrew Moriarty, a Toronto doctor and medical-industrial consultant. As a consultant to the Saskatchewan Industry and Commerce Department and the federal Department of Regional Economic Expansion, Dr. Moriarty is helping them establish a major industrial fermentation complex in Saskatoon. Twenty million gallons of material will be produced a year. Micro-organisms are put into a tank, they are fed and they grow. After a few days, they convert the food into something else. Then the bacteria are removed and the product is extracted from the liquid in the vat.

Saskatchewan has many potential sources of organic material or food for micro-organisms. Starch could be obtained from cereal grains, wet or moldy grain or other kinds that are not suitable for human consumption. Someday, when almost all our agricultural crops will have to be used directly for food, fermentation plants might use cellulose from grain straw or wood. Animal wastes and lignite coal might also provide the raw materials for a fermentation plant.

Products likely to be produced include new antibiotics, fuel alcohol, single-cell protein (a food source), industrial enzymes, amino acids and vitamins.

Industrial enzymes speed up chemical reactions. They have been used to produce a sweet sugar from corn starch. About 40 per cent of the industrial sugar market in the United States has been taken over by this sugar.

Single-cell protein can be used as food. Because we have other sources of high quality protein, the demand is not likely to be great in North America but single-cell protein can be phased in as a food extender. Also it may become useful as animal food when a starving world will make it morally and politically impossible to continue the current practice of feeding cereal grain to food producing animals. At present, no one in Canada is producing single-cell protein.

BLAMMO

This new 100% sugar free, bubble gum, developed especially for children, can't be blamed for encouraging dental caries. Instead of controversial sugar, Blammo has nutritive sorbitol which does not ferment readily into mouth acids or contribute significantly to the formation of dental plaque.

PELLON PHUN PHELT

The new 100% polyester felt, Pellon Phun Phelt, is washable, colorfast, non-shrinkable, crease-resistant and dry-cleanable. Found in eight vibrant colors it's excellent for crafts and accessories. The 72" wide felt sells for \$5.00 per yard in fabric departments and craft supply stores.

BUTTON UP

Popped buttons can be replaced quickly with Lasso Loop — a plastic thread with an attachment that lets you secure a button in 30 seconds. The plastic thread is like the kind found on garment hang tags. You can now find the Lasso Loop at Sears — Watch for wider distribution.

FAKE FRUIT FOR THE FUTURE

Scientists at Massachusetts Institute of Technology for the National Aeronautics and Space Administration are making juicy chunks of fruit from artificial ingredients. Freshly made, the fake fruit is firm, translucent. It can be flavored, textured and colored, and molded to look like farm-grown fruit. When freeze dried, for storage, the fake fruit is light and foamy and tastes like sugary cereal.

Within a generation, imitation pineapples, cherries and bananas will probably be common ingredients in products on the supermarket shelves.

Made from a sea-weed derivative, sugar, gelatin, pectin, artificial flavor and coloring the test-tube fruit will also have vitamins and nutrients added. The single product developed so far has the texture of canned pineapple. It will be used as the model for learning how to make other fruits.

SWEETNESS GOOD FOR TEETH?

Scientists may have come up with a natural sugar substitute called Xylitol that is actually good for teeth. It is found in many fruits and vegetables. In experiments in Finland on a group of dental students, those who used Xylitol to sweeten foods experienced 90% fewer cavities than those eating sucrose-sweetened foods and 30% fewer than those eating fructose-sweetened (fruit sugar) foods. The National Institute of Dental Health in the U.S. has begun a 3 year study on the effects of Xylitol.

PROGRESS IN PORK PROCESSING

Bacon strips have already been restructured — flaked, formed and sectioned. Ham will appear in new shapes — patties and chunks. Meat processors are also taking the cooking away from the consumer; precooked or fully cooked bacon will need only to be reheated (perhaps in its own disposable pan).

FOOD FIBRE

Consumers are becoming more aware of the potential benefits of adding food fibre to their diets. Kellogg's has prepared a new Food Fibre Information Kit which provides basic information about food fibre and suggests practical ways to include fibre in meals. For your kit and further information please write to: Carroll Nelson, Kellogg Salada Canada Ltd., 165 University Ave., 5th Floor, Toronto, Ontario M5H 3B8.

NEW BOOKS

Homemade Snacks, by Nell B. Nichols. Doubleday Canada Ltd., Toronto, 1976; pp. 210: Price: \$7.95

A glance at the contents indicates this book will not be dull. Consider such chapters as, "Substantial Snacks For Meal Missers" or "Sweets to Eat With a Better Conscience" to whet your appetite for further investigation. On delving further, you find such intriguing recipes as Friendship Punch, Four Grain Bread or Ground Beef Mini Meal.

In addition to recipes, attention is paid to nutrition and grocery shopping. "You don't need to know the names and functions of the individual vitamins, minerals . . . and sugars. But you do need to know the kind of foods you can depend on to supply them." Variety is the key to food shopping to be assured of including nutrients in varying amounts required by the body. For the inquisitive, there are answers to questions you were always afraid to ask such as, "Is water a nutrient? , Is it possible for a person to drink too much milk? or, Why is vegetable oil so important? "

This book would be of value to students, teachers, home economists and parents as it is quite practical in its approach.

Reviewed by: Josephine Peckham, Assistant Co-ordinator, Family Studies Department, Toronto Board of Education.

The State Fair Blue Ribbon Cookbook, by Opal M. Hayes. ETC Publications, Palm Springs, California, October 1976; pp. 123: Price: cloth, \$7.95

The name Opal Hayes may or may not be familiar to cookbook collectors in Canada; but to most good cooks, a collection of recipes from "America's foremost State Fair prize winner" would appear to be a valuable acquisition indeed. A reader could not be faulted for eager anticipation of delectable baking. Perfection, even! In this respect, the book occasionally disappoints. But this is undeniably an extraordinary cook (surely the competition must be awesome!), with 45 years of Blue Ribbons and Purple Rosettes to her credit.

It's a bit like receiving a special gift of coveted recipes handwritten from a great-aunt, complete with her comments underneath ("I hope you try this one, it is so good"). But beyond "so good" and "very good", there is a noticeable lack of information. A few descriptive words would make the copy more endearing, and one is curious about the history of the recipes.

But there is a certain authenticity in the no-nonsense format as it is. Miss Hayes obviously bakes with the expertise of great experience and a comfortable friendliness with flour and rolling pin. She assumes a somewhat similar affinity on the part of the reader; she does not write with any sort of educational tone, but has simply "written out her recipes".

Consequently, the real proof of a book like this is in actual usage. The recipes are straightforward in presentation; the style is open and clean. Attention to detail shows the results of much experimentation and perfecting. There are, however, unexplained inconsistencies in recipe writing style, occasional lapses into vague instructions, ingredients not in order, missing yields, and a few unsettling references like "one small can", "one-half cup (large)". Testing of random samples produced several prize-winners, but unfortunately a few disappointments. Even allowing for differences in American and Canadian ingredients, plus variables in technique with different cooks, a much less-than-perfect result from fairly standard recipes is annoying. One wonders if a pinch of this or that got added somewhere, or if an obvious omission of something like salt is a printer's error.

The pickling and canning sections have the appearance of dependability, and there are some interesting honey recipes. A section of simple casseroles seems a bit incongruous with traditional baking, as do desserts full of marshmallows, jello and canned fruit. But this points up the fact that this is a collection of recipes reflecting a food-style not old enough to be "heritage" cooking, nor trendy enough to be "earthy-natural", but rather in that in-between area which ends up having the widest appeal because it's where most of middle America (and Canada) is at.

This is a good gift-book for someone who knows about good baking, and would value the special nature of these recipes. For the professional, who understandably approaches with caution, the book could be filed simply for reference, but (if you do any baking at all for your own family) has the potential for creeping forward on your bookshelf. Not because it's an important book, but just because so many of the recipes are "so good".

Reviewed by: Carol Ferguson, Home Economist Consultant, Toronto.

Nutrition in the Community, edited by Donald S. McLaren. John Wiley and Sons, Toronto, 1976; pp. 393: Price: \$30.50 (hardcover)

McLaren has drawn together contributions from over thirty authors for a text to prepare public health workers for nutrition activities in the community. Although of prime value for that purpose, the book would also be a valuable reference for educators teaching world food and nutrition issues in high schools or universities.

The text is organized into five main sections. The first part outlines general concepts and the state of the art related to nutrition in the community.

It includes a description of the characteristics of communities that are most important for community workers to understand if they are to design programs to improve standards of nutrition, public health and social well-being. Socio-economic organization, the nature of social groups and relationships, local political processes and the role of community attitudes and values are highlighted. A historical perspective on several deficiency diseases and the protein myth is included. The inter-relationship of population and the food supply and techniques of assessing food and nutrient intake and nutritional assessment are reviewed.

The second section discusses the nature and complexity of today's malnutrition problems. Factors related to the labor force, agriculture, economy, demography, culture, physiology, activity and infections are all discussed in relation to their role in the causation of malnutrition. The epidemiology of both under and overnutrition (obesity and atherosclerosis) are discussed. The relationship of nutrition, infections and immunity and nutrition and mental development are included. Dietary toxins are briefly discussed.

Several measures and approaches for controlling malnutrition are discussed including the role of the following: nutrition policy and program planning, new food sources, centres for early diagnosis and treatment of childhood malnutrition, food fortification, food control (ie. safety and quality), group feeding in normal and emergency situations and education. The prevention of atherosclerosis and coronary heart disease and control of obesity are discussed.

The role of three major agencies in relation to nutrition are discussed: government, the United Nations, and private organizations such as Under Five Centres and Mothercraft Centres.

Food and nutrition experiences in the Caribbean, Ethiopia, the Philippines, India and the United Kingdom are discussed with emphasis on their food supply, nutrition concerns and their efforts to combat malnutrition. The ten state nutrition survey in the United States is outlined.

Rather than providing an indepth working knowledge in any one area, the text provides an introduction or broad overview on a range of topics of relevance to nutrition activities in the community. For more detailed information, the reader is given references and recommended reading for many of the topics discussed.

The majority of the discussions on malnutrition and ways to combat it concentrate on situations in developing countries. Thus, the text will be more valuable in providing a world perspective on malnutrition than in providing an indepth understanding of the North American situation and the programs attempting to combat the diseases of affluences. However, for readers working in affluent societies, the chapters on characteristics of communities, assessment of food and nutrition situations and nutritional status, nutrition policy and program planning, fortification, education and the role of government will provide valuable information.

Reviewed by: Ms. Catherine Rand, M.N.S., R.P.Dt., Health Promotion Branch, Ontario Ministry of Health.

Home Canning, The Last Word, by Louise W. Hamilton, Gerald D. Kuhn and Karen A. Rug. Doubleday Canada Limited, 105 Bond Street, Toronto, 1976; pp. 126: Price: paperback, \$3.25

A title more fitting for this book would have been hard to find. In this case, the "last word" is also the "best word".

With so many publications available on the topic of home canning, it is good to finally see one that is not only accurate but gives complete explanations for the "whys" of the subject.

The authors have spent a great deal of time researching the subject matter and have included the most up-to-date material that is available.

Each area of home canning is dealt with extensively at the beginning of the book in a clear and concise manner. The final half of the text is an organized step-by-step outline of the canning process.

A glossary at the end of the book is certainly the answer to novice home canners who may be unfamiliar with the technical terminology of canning. Words such as acid foods, botulism, flat-sour, gasket, etc. are all defined in easy-to-understand language.

The subject of home canning tomatoes is outlined clearly. An explanation is given as to why canning tomatoes has become such an issue.

The book is certainly a useful reference for teachers who may be instructing students in the science of home canning as well as for home economists who deal with consumer inquiries.

Although the booklet gives a lot of technical explanations, the material is presented in such a way that most every-day home canners will probably find the booklet invaluable.

It seems to have the answer to just about any canning question one might have. And, for those home canners who are daring enough to want to can vegetables and meat (chicken, rabbit, beef, lamb, venison, etc.) the directions are all there.

Reviewed by: Carroll Nelson, Public Relations Account Executive, Starword Communications Ltd., Toronto.

Simca's Cuisine, by Simone Beck. Vintage Books — A Division of Random House, New York, 1976; pp. 326: Price: paperback, \$5.75

The author has collected menus which she has served to family and friends in France yet are suitable for Canadians and Americans.

She tries to convey — through these menus — how those in France live and dine.

The book reflects the individual cuisines of the three Provinces that formed the basis of her own cuisine; Normandy, Alsace and Provence.

Some of the "Normand" recipes go back more than fifty years to her Grandmother's era.

The menus, on the whole, would not be used on an everyday basis. They are intended for entertaining family and friends on more formal occasions.

- a very important supply, glue, is missing from the supplies needed list,
- poor description of technique used in projects done by other people, such as the lamp,
- references to the author's last book without indicating what the book is,
- overuse of birds and plants as paper designs.

The "Decoupage Workshop" is a book you will use time and time again as a reference book for your class, or an ideal book for yourself. It is a good source of information when there is no one available to ask, "Where did I go wrong?" It is an excellent book on "the how to's" of decoupage.

Reviewed by: Mary McMenamin, Frontenac Secondary School, Kingston.

THE COMPLETE FAMILY BOOK OF NUTRITION AND MEAL PLANNING

W. Harding le Riche, Hume Publishing Ltd., Toronto

In this comprehensive study of nutrition, Dr. le Riche deals with matters of increasing interest to both the layman and the professional, such as food additives and pesticides, controlling weight, vegetarianism, multivitamin therapy and special diets. As well, the elementary physiology of food, the composition of food and the functions of protein, fat, carbohydrate, minerals, water and vitamins are discussed and updated.

Throughout the book, nutrition information is given in a practical, straightforward manner. The sub-titles within each chapter and supporting tables throughout the book help clarify the presentation. Useful hints are given on meal planning for both large and small families, on buying food with limited or restricted allowances and on preparing food to maintain its maximum nutritive quality.

Concern is shown for the eating habits of adults. So often this group is forgotten when basic nutritional needs and meal plans are being discussed.

Many myths about food are dispelled. The author feels fads come and go. It is the facts about food and nutrition that are studied. For instance, he feels there is still not sufficient proof supporting the use of large doses of vitamins in treating some illnesses.

Throughout the book Dr. le Riche expresses his concern for the changing global picture, the problems caused by food shortages and declining resources in relation to the crisis of vastly increasing population.

Kitchen-tested recipes for many tasty-dishes appear in the Appendices. They promote good eating at low cost. Also included are the tables: Nutritive Values of the Edible Part of Food, Recommended Daily Allowances and both the Canadian and American Dietary Standards.

This is an easily understood family book on nutrition. Every home library should have a copy. Medical students, nurses and other people in health sciences will find this comprehensive study of nutrition helpful. For both students and teachers the book is a useful resource for nutrition information.

Reviewed by: Kay Spicer, Freelance Home Economist.

**How to Present and Serve Food Attractively, by Lillian Langseth —
Doubleday and Company Inc., Garden City, New York. Christensen 1976:
Pp 273: Price \$11.50**

This cook book plus menu suggestions underlines in it's title the aim of the home economist and especially those whose work is photographed. For institutional kitchens there are exciting menus and ideas but with family size recipes.

A frequent contributor to Gourmet and the author of at least eight cook books, Mrs. Langseth — Christensen has a wonderful way with menus and their description (the restaurateur could take a lesson from her). She devotes a chapter to this subject, covering changing styles in menus as well as suggested menus for all kinds of entertaining. Another chapter covers equipment and accessories. Menus are included in each area and recipes are given for starred items.

Using the new equipment and utensils available is the topic of another chapter. It is pointed out that a good kitchen pot or a "for-life" casserole has taken the place of the silver butter-dish as a wedding present. This same casserole comes to the table, its contents enhanced with some surface decoration. "A goulash satisfies most people, but a swoosh of sour cream across the top and minced red and green pepper make it more attractive". Desserts too, baked or chilled in souffle or baking dishes can be presented without being transferred, which of course helps to simplify clean-up.

New styles in entertaining are covered. One suggestion is that young homemakers are serving fewer courses, but using larger quantities, which in itself is attractive. A great kettle of steaming Portuguese Lamb Stew, a yard long loaf of bread and an enormous salad is a different meal than their parents would have served. Menus and recipes are supplied.

Garnishing, Decorating and Arranging includes rules governing the use of each of the above skills. In the authors words the garnish is the accompaniment while the decoration is what I have called a garnish. The first rule governing the Arrangement of Platters is "Do nothing that will look contrived".

A practical end covers serving and clearing, the latter with and without a dishwasher.

A most interesting cook book for bed-time reading as well as a source of new food ideas.

Reviewed by: Dorothy Ferguson, Food Consultant, Toronto

NUTRITIONISTS WANTED



Eight home economists/nutritionists are needed in 1977 by a Christian church agency active in 39 countries. Serve "in the name of Christ" for a three-year term. Write to: MCC (Canada), 201-1483 Pembina Highway, Winnipeg, Manitoba R3T 2C8. Ph. (204) 475-3550.

MENNONITE CENTRAL COMMITTEE

NEW PUBLICATIONS AND VISUALS

Nutrition In Action — a 33-page illustrated booklet featuring ideas developed and tried out by members of the Yorkshire Branch of the Association of Teachers of Domestic Science for use in their first, middle and senior schools. Available for 80p and 14p postage from ATDS, Hamilton House, Mabledon Place, London WC1H 9BJ.

The Story of Sugar — a 24-page illustrated pamphlet containing information on the origin of sugar, its importance in the economy, consumption data and sugar metabolism. For your free copy write to: Canadian Sugar Institute, 141 Adelaide Street West, Suite 1101, Toronto M5H 3L5.

PASTA! PLAIN & FANCY

PASTA! PLAIN & FANCY is a collection of tested recipes from The Canadian Pasta Manufacturers Association.

Recipes include popular family and elegant party dishes; low-calorie meal suggestions; money and meat stretchers; ideas for making use of leftovers; and year-round salads.

All the dishes come with menu suggestions to help provide both an appealing and nutritionally balanced meal. In addition, the pamphlet has pointers on the preparation, storage, quality and nutrient value of pasta as well as tips for freezing both pasta, the accompanying sauces and casseroles.

PASTA! PLAIN & FANCY has thirteen recipes and is free for the asking. Copies may be obtained by writing Box 157, Station A, Toronto, Ontario M5W 1B2.

BUDGET GUIDE FOR THE ELDERLY

This 127-page guide, the first of its kind in Canada, deals with nutrition, housing, furnishings, clothing, health, transportation and alcohol and tobacco.

co consumption. It provides sample budgets for one and two person households and a consumer guide for the elderly is included as well. There is also a list of leisure opportunities and low cost programs for senior citizens. The guide is available at a cost of \$6.00 (\$3.00 a copy for senior citizens) from:

*SOCIAL PLANNING COUNCIL OF METROPOLITAN TORONTO
185 BLOOR STREET, EAST
TORONTO, ONTARIO
M4W 3J3*

NINE REASONS WHY MOST MOTHERS PREFER STORE-BOUGHT BABY FOODS

This folder talks about baby food and presents reasons why the reader should buy "store-bought" baby foods. Home Economists dealing with young mothers might like to have a copy for their files. For a free folder write to:

*CONSUMER RELATIONS DEPARTMENT
GERBER PRODUCTS OF CANADA LIMITED
NIAGARA FALLS, ONTARIO
L2E 6W6*

The following publications are available free of charge in English and French from Information Division, Agriculture Canada, Ottawa, K1A 0C7.

- No. 1378 **BEEF CUTS** (folder) 1975. New Chart of beef cuts with cooking methods; yield of retail cuts from a side; inspection and grading.
- No. 1519 **TENDER WAYS WITH BEEF** (folder), 1975. Buying, storing and cooking less tender cuts of beef. Recipes included.
- No. 1539 **SALADS** 24 pages, 1975. Description and preparation of salad ingredients, with recipes. Illustrations included.
- No. 1555 **BEANS, PEAS AND LENTILS** 14 pages, 1975. Types of legumes and their preparation. Recipes included.
- No. 1560 **CANNING CANADIAN FRUITS AND VEGETABLES** 29 pages, 1975. Information on canning equipment, preparation and processing of fruits and vegetables, and special canning method. Illustrations included.
- No. 1549 **EASY ON THE BUDGET** 22 pages, 1975. Low cost main dish and dessert recipes.
- No. 1551 **CEREALS ANYTIME** 15 pages, 1975. Information on types of cereals and their nutritive value; buying, storing and cooking cereals with recipes included.
- No. 1564 **COME ON INTO THE METRIC KITCHEN**, 1975. Information on metric measures for the kitchen.

VISUALS (described, not reviewed)

CAREERS IN HOME ECONOMICS

"What kind of job can I get with a B.Sc. (H. Ec.)?" A never ending question asked by all students coming into the Faculty of Home Economics and all students inquiring about Home Economics. To help the University Student Liaison Division, and to help the students who come to the Faculty for guidance, an Ad Hoc Committee was struck to help develop a program related to public relations, career development, and recruitment. Focusing on career development, the committee recommended a resource person be hired to put together a slide/tape presentation showing the broad areas within Home Economics. Linda Pickell, a graduate of the Faculty of Home Economics, began the project in the Spring of 1976. A slide/tape presentation on "Careers in Home Economics" was developed. The presentation describes Home Economics as being concerned with people, how they relate to their environment, to one another, and how they learn. It shows how Home Economics relates to peoples environment, their homes and the problems involved in choices of homes. It goes on to discuss the food we eat, how food products are developed, how people come to understand nutrition and make good choices in food. It talks about the clothes people wear, and the textiles they use in their homes. The presentation also discusses economics in family spending and the management of resources, time, energy, and money, and how this management is used to meet family needs and goals. It tells about art, about design and color, and how this affects the homes and the community environment. It also shows how Home Economics relates to ecology, to education, to community service, to personal satisfaction, and to the business world. It, in fact, shows how and why Home Economics is a career — a career that reaches out and permeates every aspect of living.

The slide/tape presentation is made to be used with any Kodak carousel slide projector compatible with a Wolensak recorder. The Faculty of Home Economics is very pleased with the outcome of the slide/tape presentation on careers and will be happy to share this presentation of "Careers in Home Economics". Any organization wishing its use should allow at least two weeks lead time, and request the slides, and tape either in writing or by telephoning: Marion MacDonald, Faculty of Home Economics, University of Alberta, Edmonton, Alberta T6G 2M8; Ph. 432-4586.

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FEES ARE DUE MAY 1, 1977

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PLANNING FOR BETTER FAMILY LIVING

*Report of a Workshop held at University of Guelph
July 9-17, 1976*

*by Lila E. Engberg, Associate Professor, Dept. of Family Studies,
University of Guelph*

An exciting pre-congress workshop of the International Federation of Home Economics (IFHE) attracted 36 participants from 20 countries to the University of Guelph, July 9-17, 1976.¹ The "Planning for Better Family Living" workshop was co-sponsored by the College of Family and Consumer Studies, The Centre for International Programs and the Office of Continuing Education of the University.

The major goals of the PBFL workshop were:

1. to create an awareness of the inter-relationships between nations and communities and the population/resource imbalance at national and family levels.
2. to explore the concept "Planning for Better Family Living" as an educational approach which could strengthen family life in developed and developing countries alike.
3. to develop strategies for inter-agency co-operation and for integrating the P.B.F.L. concept into programs of the participants' home countries.

Presentations relevant to these goals were made by seven speakers from the University of Guelph and three guest participants: Ms. Jean Ritchie, PBFL Regional Advisor for FAO/UNFPA project of the Economic Commission for Africa, Dr. Russ Mahan formerly FAO population officer currently with the Merrill-Palmer Institute in Detroit and Dr. Gladys Vaughn, Assistant Director, American Home Economics Association, International Family Planning Project.

Two economists from the University of Guelph stimulated our thinking at the beginning about disparities within and between nations, how development takes place, and some of the larger issues which affect family life. This was followed by a week-end with Canadian families and the opportunity for participants to develop objectives for work groups where they could pursue topics of concern in greater depth throughout the week.

1. Numbers of home economists, who came from various countries were as follows:

India 3	Nigeria 2	
Malaysia 2	Zambia 1	Ireland 3
Pakistan 1	Jamaica 1	Norway 1
Thailand 2	Trinidad 1	Canada 2
Philippines 1	Antigua 1	U.S.A. 2
Australia 4	Belize 1	Colombia 2
Ghana 4	U.K. 1	Guatemala 1

Of the above, fifteen from developing countries received bursary support in the amount of \$300 per person from Canadian International Development Agency (C.I.D.A.) This covered the fees for the course plus travel costs from Guelph to Ottawa for the XIIIth Congress of I.F.H.E. The organizers were grateful for CIDA support and for additional donations which made it possible for eight other candidates from the above countries to attend.

The workshop format allowed for the presentation of two topics each day, first on concepts of the quality of life and its measurement, changing family relations and life styles, a systems approach to family structure and change and then to more concrete family problems and national concerns: family planning, nutrition and food supply, housing and community environment, and consumer education. The speakers introduced the issues which were then appropriately enlarged upon by the lively interchange of the participants. Problems of disadvantaged families especially in developing countries was the focus of concern.

Some of the problems were highlighted in the film "Limits to Growth" and in the review of a wide variety of audio-visual and instructional materials which were provided for the workshop.²

Five work groups met daily and presented reports on the final day on each of the following topics: (1) research and determination of needs of the family, (2) education and training for family living programs, (3) population and family planning education, (4) management of family resources and (5) family relations and role of women.

The major areas of concern were:

1. "Quality of life" should take into account — physical, socio-cultural, intellectual, emotional and economic well-being of each person within the family.
2. The concept of "family" be enlarged to include variant and emerging forms, eg. single parent units, communal systems and other groupings of individuals who share resources and provide mutual support over time.
3. Problems of families be considered as inter-related; also — family, community and national concerns are inter-related and inter-dependent — eg. low levels of nutrition and health, income fluctuation and poverty, low prestige and attention given to agriculture, urban migration, high rates of illiteracy, inadequate housing, lack of employment opportunities and prospects for the future, loss of motivation, conflicts regarding family size, parental inadequacy, inadequate support services for the elderly and for child care with the breakdown of kinship and traditional services, dual role and emerging responsibilities of women, lack of involvement of men, inter-personal communication within the family.
4. Insufficient interest, lack of support and national policies regarding programs for "better family living."

Recommendations for Action

1. to establish co-ordination, integration, co-operation and effective communication for joint planning and inter-agency in country programs for better family living.

2. The many publications and film strips related to population, family planning and extension education received from FAO (Food and Agriculture Organization of the United Nations) and from AHEA were appreciated, also the film "It Couldn't Happen to Me" produced by Prof. E. Herold of the Department of Family Studies, University of Guelph.

2. to expand inter-disciplinary research in all areas of family life at two levels — the level of simple social inquiry and investigation as well as the more complex in-depth research.
3. to involve existing and potential clientele in studies to determine their own wants and needs with respect to "family life", and to establish priorities for programs.
4. to make findings of research available to governmental agencies at all levels of program planning in order to influence the formulation and execution of social policy.
5. to hold follow-up and periodic inter-disciplinary seminars and workshops to facilitate communication and understanding between home economists and specialists dealing with various aspects of family life and to achieve a perception of the problems of the family as a whole.
6. to establish and/or re-organize educational and training programs to focus on all aspects of family life and based on the changing needs and values.
7. to develop and/or establish community resource centers and organizations to maximize community participation, and to foster co-operative projects and team training to meet family needs.
8. to explore strategies for integrating (a) population and family planning education, (b) education for parenthood, marriage, family life and for (c) family decision-making within community, extension and formal education for both sexes, at all ages and all instructional levels.
9. to create increased awareness of womens' role in food production, preservation and marketing and womens' need for agricultural education in order to increase varieties of nutritious foods grown and used at home and for sale. Selective food production at family level is the basis for better nutrition in most countries.
10. to foster technical and vocational education for women and girls and the establishment of appropriate small scale businesses, agro-allied and cottage industries as a means of increasing family income and purchasing power.
11. to attract and involve men in programs for better family living.
12. to use mass media in publicizing and attempting to gain program support at three levels: that of the general public, of policy makers and of colleagues in home economics and allied fields.

The participants recognized that in most countries there is a shortage of trained personnel both at professional and para-professional level and inadequate financial support for research and for development of integrated and comprehensive programs for better family life. They insisted that interchange between universities and support by donor agencies is important, to implement, to assist or to evaluate family living and home economics programs. They want international contacts, exchange of ideas, publications and research information. Strategies for inter-agency co-operation were not developed at the workshop but all who attended were eager to maintain contact and to set up a mechanism for continued exchange. They cared about "the quality of life" and were committed to follow-up in their home countries.

Le guide alimentaire canadien à une nouvelle présentation

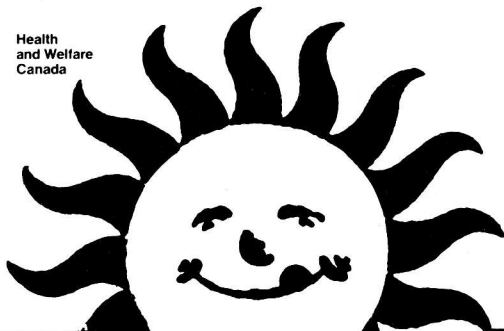
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"CIRCLE THESE DATES"

April 24-27, 1977 Canadian Restaurant Show — Toronto.

April 26-29, 1977 Ontario Dietetic Association Annual Meeting in conjunction with New York State Dietetic Association — Niagara Falls, N.Y.

April 27-29, 1977 Alberta H.E.A. Convention — Edmonton.

April 29-May 1, 1977 Saskatchewan H.E.A. — Regina.

May 11-13, 1977 SCITEC "Search for Survival" — University of Toronto.

June 13-15, 1977 CAC Annual Meeting — Guelph.

June 20-23, 1977 Canadian Dietetic Association Conference, Skyline Hotel, Ottawa. "Energetics in Dietetics".

June 26, 27, 1977 Canadian Home Economics Pre-Conference — Winnipeg.

June 27-30, 1977 Canadian Home Economics Association Conference — Winnipeg.

June 27-July 1, 1977 American Home Economics Conference, Boston, Mass.

August 15-18, 1977 Western Hemisphere Nutrition Conference — Quebec City.

REGIONAL NUTRITION SEMINARS TO BE SPONSORED BY GENERAL FOODS, LIMITED

Toronto — As part of its continuing program to promote greater knowledge and understanding of nutrition, Robert S. Hurlbut, President, General Foods, Limited, announced today that the company is sponsoring two regional nutrition seminars in 1977. The first will be held in Edmonton on April 6; the other in Halifax on May 12, 1977. "It is the intention of General Foods to sponsor major nutrition seminars across Canada on a regular annual basis," Mr. Hurlbut said.

Mr. Hurlbut said that eminent Canadians from many disciplines will address the seminars which will be attended by representatives of public health, social work, dietetics, nursing, education, sports and recreation, Home Economics and nutrition communications.

In Edmonton, the seminar theme will be: "Nutrition — Facts and Fancies" with Dr. Richard Goldbloom, the infancy specialist from Dalhousie University as the keynote speaker and a workshop leader. Other speakers and workshop leaders include Mrs. Nancy Clegg Buck of the Edmonton Journal, Miss Maryl Ballantyne of The Health Protection Branch and Dr. Elizabeth Empey of The Foods and Nutrition Division of the University of Alberta.

In Halifax the seminar theme will be: "Nutrition: Exploring Inner Space" and the lead speaker will be author and nutritionist Dr. Harding le Riche of the University of Toronto, who will also lead a workshop on "Family Survival." Other participants will include Mrs. Wendy McDonald of the Nova Scotia Department of Public Health, Mrs. Heather Milne Nielsen of the Health Protection Branch and Miss Jessie Rae also with the Nova Scotia Department of Public Health.

Both seminars will take a multi-disciplinary approach to nutrition and will include updates on the Canadian Food Guide and the National Nutrition Survey, land use, school lunch programs and the dissemination of nutrition information. Speakers and workshop sessions will focus on the latest nutrition research and the practical application of this knowledge.

NUTRITION CENTRE BEING DEVELOPED

The College of Home Economics at the University of Saskatchewan, Saskatoon, is developing a centre of excellence in nutrition. It is establishing a much needed nutrition laboratory in the Thorvaldson Building. Work is under way and the laboratory should be ready by spring.

Dr. Doug Gibson, dean of the College, noted that interest in nutrition in relation to health and well being has increased greatly in the last few

years. He also noted that information on the subject, "some of it valid, and some of questionable quality", has been increasing as well. In view of this, a report on the role of the College of Home Economics, which was completed last year, recommends greater emphasis on nutrition, in particular community nutrition.

Dr. Gibson said the laboratory will strengthen teaching in nutrition at the undergraduate and graduate levels by making possible the development of new classes, and it will provide facilities for much needed research.

"Not only will it benefit students but the public as well, directly through a general course we intend to give to interested members of the community and indirectly through the increased knowledge about nutrition that results from our research programs."

Advanced students will initially use the new laboratory for feeding trials with small animals to evaluate the feed efficiency and quality of proteins from different sources. They will subsequently go on to nutritional self studies to learn at first hand the effects of various diets on their well being. This type of research will be directly relevant to their future careers in dietetics and nutrition.

Faculty directed research will include studies of the biochemical implications of different diets, of the role of fibre in the diet, of the effects of environmental stress on nutrient metabolism, of infant nutrition, and of seasonal fluctuations in the Vitamin A and carotene content of milk. These major studies in nutrition based in the College of Home Economics but with the co-operation of nutritionists in other departments.

Another important research area, Dr. Gibson said, concerns surveys to determine the nutritional status of different population groups in the province. Urban and rural dwellers and different ethnic groups might be compared and changes in the long-term nutritional status of particular segments of the population might be assessed. The laboratory would be used to test biochemical reactions and to analyze vitamin, protein and cholesterol status.

"A college or department that is content merely to pass along the findings of others without ever itself adding to the overall sum of knowledge is not fulfilling its responsibility as a university body," Dr. Gibson commented.

BEEF SUPPLIES TO DROP OFF

Canadian beef output in 1977 is expected to decline from the record high level of the past year. During 1976 Canadians consumed beef at the record rate of around 110 pounds per capita.

For 1976 consumer beef prices were most attractive as supplies were large and retailers widely featured beef. For November the Consumer Price Index for beef was 122.6 (1971=100) down 17% from a year ago. In comparison, wages and salaries continue to rise with the result consumers can buy considerable more beef now than a year or two ago with an hours' pay.

High beef output and lower prices meant producers culled herds heavily as evidenced by the high rate of slaughter of cows and heifers. Also con-

tributing to the reduced cattle numbers was the higher calf slaughter. At July 1, 1976 cattle inventories were 4% below the same date in 1975.

Canada's cattle slaughter in 1976 was about 3.6 million head, an all-time high. For 1977, recent estimates forecast a drop of 5 to 8% in slaughter. Most of the decline may occur in the last half of the year.

As slaughter turns down, it is normal for prices to move upward, basis the age-old law of prevailing supply-demand factors. The various supply factors, including current marketings, imported product availability and storage stocks, interact with current demand factors, viz. disposable consumer income and shopping preference, price of competitive foods, export markets, seasonal factors etc. through the buyer-seller bargaining process. This results in constant sensitive adjustment of prices through the producer-processor-retail segments of the meat system.

Consumer demand is likely to remain relatively strong in 1977 as per capita disposable incomes continue upward, but at a slower rate than in recent years. Countering the demand pressures will be the fact pork prices will be more attractive and poultry supplies adequate.

For consumers, 1977 may just be the first year of rising beef prices. The next year or so will be critical to future beef supplies. If producers remain in too tight a cost-price squeeze for much longer, it could mean large reductions in supplies down the road.

SOME FACTS ON BACTERIA

The concept that "all bacteria are evil" has caused considerable consumer furor within the last year. Much of this consumer concern is due to a general misconception of bacteria — their number, presence and significance. In fact, most bacteria are beneficial and actually help provide the quality of life presently enjoyed by the consumer according to Gail (Evans) Holland (Mrs) Director of Scientific Activities for the Meat Packers Council of Canada.

Bacteria are single celled microorganisms, actually so small they must be magnified 600 to 1000 times or more in order to be seen. Bacteria multiply their numbers by splitting in halves. Under ideal conditions bacteria may divide every 20 minutes or less; thus the population growth is a geometric progression eg. 1-2-4-8-16-32-etc. Under ideal conditions *one* bacterium could produce 131,072 bacteria within 6 hours, more than 1 million in 7 hours, and more than 34 billion within 12 hours. This rapid growth pattern of bacteria easily explains the large numbers which are encountered when discussing bacteria. On the other hand, the growth rate may be decreased or inhibited by altering temperature, moisture, air, presence of chemicals eg. salt, etc.

Bacteria may be found almost everywhere in nature. They are carried by air currents, rivers, streams. They have been found on mountain tops and in polar ice caps. The soil teems with them — good garden soil may contain 4.5 billion microorganisms per pound. Bacteria and other microorganisms are in the air we breathe and the food we eat. A glass of tap water may contain 10 to 50 bacteria. Bacteria are on the surfaces of our

bodies, in our mouths and noses. They are in and on every plant and animal. The environment that is so compatible for man's survival provides also the conditions that favour the growth and survival of most micro-organisms.

1. Before preparing food, hands and nails should be thoroughly washed and scrubbed with soap and water. Hands should be rewashed if the food preparation has been interrupted by a telephone call, a sneeze or cough, scratching the head, use of the toilet, etc.
2. Because the nose and mouth harbour Staphylococci and Staphylococci, (types of food illness bacteria), sneezes and coughs should be blocked. The hands should be thoroughly washed before recommencing food preparation.
3. Cuts and sores harbour Staphylococci. All cuts and sores on hands should be disinfected and properly bandaged during food preparation.
4. The cutting board and knife should be thoroughly washed before changing from cooked to raw foods, raw to cooked foods or vegetables or meat, or poultry products.
5. Food which has fallen on the floor should not be replaced onto the table.
6. The common wiping cloth only transfers bacteria from one place to another; it does not clean. The common wiping cloth should be avoided.
7. The use of a common spoon for stirring and tasting should be avoided. The spoon may transfer bacteria from the mouth to the food.
8. Because room temperature promotes rapid bacterial growth, perishable foods should not be held at room temperature.
9. The colder the food, the slower the bacterial growth — thus perishable foods should be refrigerated preferably at less than 40°F (4°C).
10. Perishable foods should never be left in a warm car while other shopping is being done. Postpone your food purchases until the end of shopping and take them directly home for immediate refrigeration.

These ten points may be summarized in one word "Prevention" — the prevention of bacterial cross-contamination from a food or object to another food product, and the prevention of rapid bacterial growth.

MORE PORK IN 1977

Pork has represented an increasingly good consumer buy in recent months, points out H. K. Leckie, General Manager of the Meat Packers Council of Canada.

With increased hog runs resulting in lower hog prices, pork prices at wholesale and retail have also moved downward. In November, the Consumer Price Index for pork stood at 190.2 (1971=100) compared to 208.1 in June '76 and 228.6 a year ago.

In recent weeks U.S. hog marketings have been about 30% above year earlier levels, while in Canada a more modest 5% increase has been recorded in the last quarter of 1976 compared to the same period a year ago. The production upturn is in response to the strong hog prices that prevailed

from mid '75 through the early part of 1976.

During 1976 Canadians consumed about 49 lb. of pork per capita, about the same as a year earlier, but well below the level of the early 70's when consumption peaked in the high 60 lb. range, due to large output and relatively low prices.

Looking ahead Mr. Leckie said, "Pork supplies are likely to advance over 1976 levels, particularly in the first half of 1977, although not as much as perhaps would be desirable."

Recent U.S. projections indicate first half pork output could run 20% over a year ago, while Agriculture Canada forecasts a 10-15% increase. For the last half of 1977 supplies may begin to slacken off as producers react to current lower hog prices and other factors.

As Canadian hog prices follow the basic trend of U.S. markets and with U.S. prices expected to continue under pressure, Canadian prices are likely to continue at lower levels relative to levels of the first part of 1976.

At the present time consumers are again benefitting at the pork counter, while producers are in a cost/returns squeeze and pork processors are having problems in running plants profitably. The challenge is to find, within the competitive market structure, some means of evening out price fluctuations for the benefit of producer and consumer. The fundamental solution is to consistently have pork prices high enough to provide adequate incentives to pork producers to keep markets amply supplied in the future.

O.D.A. AWARD OF HONOUR 1977

The late Dorothy M. Shantz was honoured posthumously by the Ontario Dietetic Association at the November 1976 mid-year Meeting of the Board of Directors. In lieu of presentation of the usual plaque and piece of silver, the 1977 Award of Honour will pay tribute to Dorothy in recognition of the numerous contributions she made during her outstanding career, to the Dietetic Profession and to the Food Service Industry. To help perpetuate her influence on our profession's growth and development, the Ontario Dietetic Association donated one hundred dollars to the Dorothy Shantz Memorial Scholarship Fund, administered by the Canadian Restaurant Association Foundation. From this fund, each year, a scholarship will be awarded to a student in the Hotel and Food Administration degree program at the University of Guelph.

DR. ELIZABETH CHANT ROBERTSON HONORED

It was announced in December, 1976, from Government House, Ottawa, that Dr. Elizabeth Chant Robertson has been named a member of the Order of Canada. The investiture will be made early in 1977.

Dr. Robertson needs no introduction to Canadian home economists. She graduated from the University of Toronto with a B.A. in Biology and Physics, M.D., M.A., Ph.D.

Her professional career has covered many areas. She has been a lecturer

at the University of Toronto to students of six different faculties and schools — medicine, dentistry, nursing, physical and health education, food sciences and extension. She was consultant to the women's program at the C.B.C. and was a participant on a radio program for 17 years. She was also on numerous radio and television programs as a nutrition expert. For 24 years, she was the Child Health editor to Chatelaine magazine. She has authored and co-authored 15 books on elementary nutrition and health. Her latest book "the Right Combination", published in 1975, is at present being translated into French, and the section of the book on nutrition has been published in Australia. Dr. Robertson has worked at the Hospital for Sick Children, Toronto, for the greater part of her career in research. She is a member of several professional organizations, being a founding member of the Nutrition Society of Canada.

In 1926, Dr. Elizabeth Chant married H. Grand Robertson. B.A., Ph.D. Dr. Grant Robertson is a former chairman of the Classics Department, University of Toronto. They have two daughters and grandchildren.

Dr. Robertson's accomplishments have covered a wide field as a research scientist, lecturer, author and consultant.

To Elizabeth Chant Robertson and her husband and family, our sincere congratulations, and our grateful thanks for her assistance to us as individuals and to our profession.

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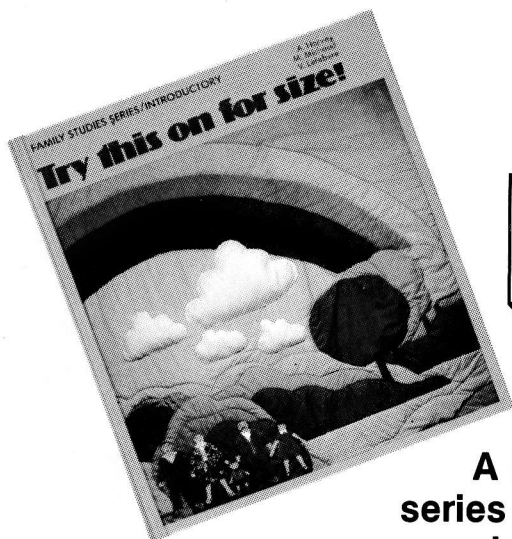
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